NORTHWESTERN UNIVERSITY

CONTRIBUTIONS TO EDUCATION

SCHOOL OF EDUCATION SERIES

PUBLIC SCHOOL PUBLISHING COMPANY
Bloomington Illinois

San Antonio, Texas

Presented by Mrs. Connie M. Harry
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3-14-51

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Foreign Language Equipment of 2325 Doctors of Philosophy

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Northwestern University Contributions to Education
School of Education Series, No. 2

PUBLIC SCHOOL PUBLISHING CO.
BLOOMINGTON, ILLINOIS

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Bloomington, Illinois

378.2
B565

Preface

At each of the past three meetings of the Association of American Universities the question of language requirements for the doctorate has arisen in the discussion. Such short shift has been made of it by some of the members of this august body that the natural conclusion would be that it would never have the courage to show itself again. But perennially it is there. In short it will not down. There are features in the present situation that compel its presence. These same features urge all persons desiring intellectual honesty to give a fair hearing to the facts.

For many decades it has been commonly accepted without question that one cannot qualify for the degree of doctor of philosophy unless one has a reading knowledge of at least two foreign languages, sometimes more. This is a requirement that was first imposed in America when this degree obtained from foreign, and especially from German universities, was considered much superior to the same degree obtained from any school at home. It was first imposed before American universities had done such outstanding research work of their own as caused them to be thought of as superior in some fields to foreign institutions.

To-day, however, conditions are greatly different. A few years ago many of our best native scholars received a part or all of their advanced training in Europe. At present this is true of only relatively few. On the other hand, many foreign students now come to our universities for the corresponding training for which our men formerly went abroad. Furthermore, according to testimony of leading scholars in many fields, foreign scholarship has nothing to contribute to one who seeks high specialization in certain lines of scholarly endeavor.

These changed conditions do not, of course, constitute ground for drawing any general conclusions bearing upon the traditional foreign language requirements for the degree of doctor of philosophy. Unmistakably, however, they are a consideration that warrants proceeding without further delay to inquiring more carefully into the situation. They show clearly that time has wrought changes such that a problem has been created. The problem has emerged slowly, but to deny that it now exists is to admit a preju-

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dice or narrowness of vision which is not rightfully to be expected of those who have already benefited from the broadening influence commonly credited to the possessors of the highest academic degree.

To undertake a study such as the present one is in entire accord with scientific method. This method seeks all the facts pertinent to a problem, and permits only such conclusions as an impartial interpretation of those facts warrant. Since the doctor's degree represents the highest formal recognition of training in the arts and sciences, a study such as the present one is in accord with the very principles of research itself.

This study is the barest beginning. Perhaps it is not the best one. It is, however, a beginning. It is put out in the hope that other studies will follow in the same general field. It seeks to prove no position, but merely to present and interpret facts.

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CHAPTER I

The Problem

The place of foreign languages in the training and subsequent work of graduate students in American universities is an unsettled problem. No one who knows the facts can doubt this statement. First of all is the widespread belief that many prospective and many actual doctors of philosophy know but little of foreign languages, and that little not well enough to furnish them with an effective tool. The present study shows that this belief contains a disturbing element of truth. Every institution in the Association of American Universities makes foreign language demands of candidates for the doctorate, practically all of them specifying a "ready reading knowledge" of two languages. Yet the admission is made by many holders of the American Ph.D. that they are relatively illiterate outside of their mother tongue.

There is also the unsettled question of relative values in the expenditure of time. The graduate student is in the prime of his powers. He averages entering upon his graduate work at about the age of 30 and takes his degree at the age of 33. His earning capacity is relatively high. He is using valuable and costly equipment in the way of professors, libraries, laboratories. He is enjoying opportunities available to but one in many thousands. Shall he be obliged to use this equipment and opportunity on the study of high-school subjects? Some will answer, "Certainly, if he is so unfortunate as not to have mastered these tools (or this culture, as the case may be) while he was in the high school." Others say, "Even if it is true that the advanced scholar is under some handicap without the foreign languages this handicap is not great enough to warrant the expenditure of such valuable time and opportunity in order to remove the handicap."

Another phase of the problem comes in the claim that a language requirement in the graduate school does not result in the mastery of the foreign languages anyway. Critics cite the fact before mentioned, that the average American doctor of philosophy does not turn out to be a linguist, to say the least. They also refer to the many unquestionable cases where candidates cram for a few weeks or a few months and then pass their language examinations with

so little command of the languages that they never thereafter undertake to use them to any extent.

Naturally this point involves a question of honor or responsibility on the part of American graduate schools. On the one hand, we have a reasonably rigid paper requirement. On the other hand, this requirement as the present study clearly reveals, is so often evaded or so poorly planned and administered that it is in no small degree a dead letter in American scholarship. If foreign languages are a necessary tool for all advanced scholarship as some would claim, if they are a badge of culture that should consistently attach to the Ph.D. degree as others insist, if they are a hurdle which should be placed in the way of the incompetent as some desire them to be, then ought they not to be made effective for these purposes? If, however, none of these purposes are sound as another group asserts,[1] ought there not to be some adjustment more nearly in accord with the ends of modern education?

Then there is the question whether, if foreign languages are to be required, German and French (with perhaps now and then Latin as a third) should be the languages always selected, or whether some elective plan should not be adopted. Columbia University is the only institution of the American Association which comes out explicitly and says that the language requirements are a departmental matter and differ in various graduate departments. Columbia even allows other technical instruments such as statistics and surveys to be substituted for one or more of the languages. On the other hand, Harvard and several other institutions report that practically no exception to the requirement of German and French is ever allowed. Perhaps half of the universities allow a substitution of some other language for either German or French.

Back of the present inquiry is the desire to throw whatever light is possible on these and other problems connected with the Ph.D. language requirements. Educationists are commonly believed to be hostile to foreign language requirements and in some quarters are blamed for keeping such questions as those mentioned in the foregoing paragraphs stirred up. They are not always even assumed to have a scientific interest in the problem, but are accused of seeking to "let down the bars" so that illiterates can enter at will the erstwhile jealously guarded fields reserved for the cultured elite. Are these accusations justified? Are all the other fields of

[1] See many quotations on these points in all sections of the report.

learning satisfied with the language requirements as they exist? These are questions which all should desire to have answered.

Following is a statement of the method used in this inquiry. In the early spring of 1929 a questionnaire was sent out to 3,500 doctors of philosophy of the institutions constituting the American Association of Universities. It was the intention to include names from all universities of the Association but several institutions did not have lists of their doctors available with present addresses. In a few instances either through the taking of the Ph.D. degree in two different institutions or by some accident of registration, names of those having degrees from foreign universities were included and something like a dozen of these are incorporated in the returns.

In most cases those to whom the questionnaires were sent were of persons taking their Ph.D. degrees during the decade 1915-1926. Perhaps 50 out of the 2,325 answers returned were from dates earlier than 1915, and about the same number from dates later than 1926. In cases where the number of Ph.D. degrees conferred by an institution during the decade selected did not exceed about 200, questionnaires were sent to the entire list. Where the number of degrees conferred was so large as to make the use of all of the names impracticable every second, third, or fourth name was taken from the list, care being used also to distribute the selection fairly among the various departments.

If interest in the problem may be judged from the response to this inquiry, the question proposed is a very live one among the doctors themselves. Approximately two out of three to whom questionnaires were mailed returned them filled out, usually with every evidence of care. In all, 2,325 usable returns were received; about 50 came too late to be used. True, there was a small number of cases in which the respondents returned the blanks unfilled except with a caustic or flippant reply. Some objected to having the problem raised or discussed at all, saying that everybody is satisfied except meddling schools of education. Others heartily condemned as uneducated and uncultured any person who would venture to question the established position of the languages. A few respondents were not in accord with the form of the inquiry. On the other hand, a far larger number expressed gratification that such a study had been undertaken, many volunteering to render any further assistance possible if called upon. Some of these last were chairmen of graduate divisions or persons responsible for the gen-

eral oversight of research in their departments. Several were in charge of industrial research laboratories.

In order to assist in a full understanding of the returns a copy of the questionnaire is here included in slightly compressed form but covering all items of the inquiry:

QUESTIONNAIRE

I. Personal items

1. Age? Sex? University conferring degree? Year?
2. Major subject? Present occupation? If *teacher,* subject, type of institution, rank?

II. Meeting language requirements

1. Mother tongue? Languages passed as part of Ph.D. requirement?
2. Years of study of each language, in high school, in college, or university, under tutor?
3. How long before conferring of degree were language examinations required to be passed?

III. Amount of use made of foreign languages

1. Approximate number of books *or* of pages read in each foreign language during graduate study?
2. Approximate number of books *or* of pages read in each foreign language during the last 24 months?

IV. Degree of skill possessed in foreign languages

1. While studying for degree, was estimated mastery for each foreign language *excellent, fair* or *poor?*
2. Since taking degree has estimated skill in each foreign language *increased, decreased* or remained the *same?*

V. Technical instruments other than languages

1. What technical instruments are required in your major field (statistics, tests, surveys, formulae, etc.)?
2. In which of such instruments were examinations taken?

VI. Comments added, giving further information, advice, suggestions

At the risk of monotony of form it was thought best to report the results by subjects or department of study all based on the same general framework or outline. The report for each separate field is thereby made a complete unit in itself. This will enable doctors in chemistry, for example, to compare their position with that of doctors in zoology, or either with their compeers in one of the social sciences or any other subject.

Not the least significant of the data offered are the comments quoted verbatim from the various returns. In most instances the quotation is only an excerpt, but in no case was the matter selected in such a way as to change the meaning by separation from the context. The necessity for this abbreviation is obvious when it is known that an aggregate of approximately 1,000 pages of comment was received.

CHAPTER II

Botany

One hundred thirty-one doctors of philosophy majoring in botany returned replies to the questionnaire, 117 men and 14 women. The present age range of these respondents is 26 to 54 years with an average of 38 years. The average age at which the Ph.D. degree was received was 33 years. The 131 degrees were conferred by 20 different universities.

Ninety-one of these botanists are at present engaged in teaching, 40 in research, 3 combine some other occupation with either teaching or research. Of the teachers 61 are in universities, 30 in colleges or normal schools, and 2 of the latter group also teach in public schools.

English is the mother tongue of 124 out of the 131, 7 represent various foreign tongues. Every person was examined in German as a part of the doctorate requirements, all but 1 were examined in French, 2 were examined in Latin, and 1 in Spanish.

The time when the Ph.D. language examinations were required varied considerably. Fifty-nine reported the examinations taken one year before the conferring of the degree, 34 prior to the preliminary examination, 27 before examination on the thesis, while the other 11 reported varying periods or else failed to make reports.

The reports on examinations taken in technical instruments other than languages are so surprising that there is some doubt whether the question was thoroughly understood by all the respondents. Fifty-three persons state that they were examined in statistics, 39 in tests, 42 in surveys, and 36 in formulae. If botany is requiring these instruments to the extent indicated it is rivaling education and the social sciences in such requirements.[1]

USE MADE OF FOREIGN LANGUAGES

In the display in Table I of the number of books and of pages read in foreign languages during graduate study and in the last two years, caution must be observed against taking the figures too

[1] The terms statistics, tests, surveys and formulae have so different meanings for the various fields that the reports must in each case be understood in the light of their meaning for the field in question.

literally.[2] In most cases they were only estimates at best, and these were sometimes followed by the statement that the estimate was very general. Many respondents refused to answer this question, saying that they could not judge accurately enough to make the figures of value. A few said they used foreign languages nearly as freely as English. Others frequently wrote "None," "Practically none," "Few," "Many." With these explanations and cautions in mind, general trends at least may be discovered from the tables which follow:

TABLE I

USE MADE OF FOREIGN LANGUAGES

	During Graduate Study				During Last Two Years			
	No. Persons	Books Read	No. Persons	Pages Read	No. Persons	Books Read	No. Persons	Pages Read
German...	24	1–5	56	50–1000	17	1–5	52	2–500
	11	6–50	23	1200–7500	6	10–30	23	600–7500
French....	24	1–5	74	30–1000	12	1–5	56	5–500
	6	10–40	5	1200–5000	4	10–20	9	600–2000
Latin.....	3	4–5	19	5–300	4	2–5	14	2–100
	3	9–15	4	500–10,000			3	150–500
Spanish...	2	2–3	3	50–100	2	1–20	...	.....
Italian....	1	1	5	50–1000	2	1	3	6–300
Others....	1	1	3	7–30	3	1–2	3	600–1000
			2	50–300				

Botany shows a slightly lower estimate of the extent to which foreign languages are used than some of the other sciences. Whether this is an actual difference or the result of a more modest estimate there is no way of knowing from this study.

Table II showing the amount of formal language study had by this group, should be read: 46 percent of the respondents report 2.6 years of German in secondary school, 80 percent report 1.8 years of German in colleges or universities; and so for other items.

TABLE II

AVERAGE NUMBER YEARS FORMAL LANGUAGE STUDY

	German	French	Latin	Greek	Spanish	Italian	Other
Secondary School—	(46%)2.6	(24%)3.25	(61%)2.88	(11%)3.22	(4%)1.3		
College or University—	(80%)1.8	(70%)1.8	(23%)2.	(10%)2.3	(7%)1.5	(2%)1.5	(4%) .6

The degree of skill possessed in the foreign languages during graduate study and since, is shown in Table III as estimated by

[2] This caution holds for corresponding data in connection with all other subjects or fields as well. It cannot be too strongly insisted that these summaries should not be given rigid statistical interpretation for these reasons:

(1) Many respondents refused to give quantitative answers.

(2) Some persons reported both books *and* pages; most, only books *or* pages.

(3) Some stated that books reported were not always read entire.

the users. This table should be read: 12 percent of the respondents claim excellent mastery, 66 percent fair mastery, 22 percent poor mastery of German during graduate study; and so on for the other items.

TABLE III

ESTIMATED LANGUAGE SKILL AND ITS PERSISTENCE

	Skill During Graduate Study			Skill After Graduate Study		
	Excellent	Fair	Poor	Increased	Same	Decreased
German	12%	66%	22%	43%	27%	30%
French	27%	56%	17%	32%	33%	35%
Latin	8%	58%	34%	20%	33%	47%
Spanish	33%	17%	50%	66%	34%	....
Italian	....	75%	25%	100%	....	....

From Table III it is evident that, as judged by the doctors themselves, not more than one out of five had an "excellent" skill in foreign languages during graduate study, and that a larger proportion admit "poor" skill. Somewhat more than half claim "fair" skill of whatever languages they undertook to use. Nearly two-thirds estimate that since completing graduate study their skill in German and French has remained the same or decreased.

COMMENTS

Out of the 131 doctors with a major in botany, 110 took the trouble to add comments to their formal reports. Of these more than half (57) state that German and French are essential to their work. Against this perhaps 10 believe that the time put on languages is not justified by their later use. Latin comes in for strong emphasis, being placed on a par with modern languages by 20 persons out of the 131. Other languages mentioned as desirable or necessary are: Spanish, Greek, Russian, Italian, Swedish, Japanese, Norwegian, Dutch. About 10 percent of those commenting defend the languages on the ground of their disciplinary or cultural value, wholly aside from their practical utility. Approximately 35 percent advise leaving the requirements as they are or making them stricter. Several urge that the language requirement be so administered as to secure real reading ability, not mere formal meeting of a requirement.

These quotations are representative of the group who ardently support languages as a Ph.D. requirement:

"Too few doctors in science read German and French easily. Articles must be read in the original—not as abstracts, and they *must* be read."

"The student should be well grounded in Latin, German and French."

"The standard should be raised, not lowered."

"A knowledge of foreign languages is just another of the fundamentals that *should* go to make up an educated man."

"How can a Doctor of Philosophy presume to keep abreast in his field of research if he does not have a reading knowledge of foreign languages? There are, of course, a large number of "still born" doctors, whose dissertation is their first and last serious productive effort. There are some who may feel that they can keep abreast of their subject by reading English journals and books only, others who are unfortunate through lack of adequate library facilities. Such persons may reply to this questionnaire that they have made little or no use of their foreign language since receiving their Ph.D. degree. Shall we seek to shape the requirements for our highest academic degree so as to make them more easily absolved by those classes of candidates?"

"Also the very tradition of the degree Ph.D. (though at present much degraded) surely implies that the recipient shall not be limited to one tongue out of the many. That is provincialism. I know Ph.D.'s who are illiterate and I consider it very regrettable."

"The Ph.D. degree implies general scholarship, and I cannot conceive of real general scholarship in an individual who is blind to current thought expressed in French and German, or who has failed to get the insight into European thought which comes from knowing how a Frenchman or a German says what he thinks. Translation will not give this insight."

"Scholarship and the advancement of knowledge in the fundamental sciences cannot be advanced by studies such as this undertaken by persons with the point of view characteristic of the great majority of the members of Schools of Education and Departments of Education. When a man seriously questions the necessity of a real reading knowledge of German and French to one engaged in productive scholarship (in any field, but particularly in science) or university teaching, he automatically disqualifies himself as a judge of matters of scholarship and teaching in colleges and universities."

That not all doctors in science are agreed in assigning languages so high a place was evidenced by frequent comments of which the following are fair examples:

"The Ph.D. language requirement in my case did not justify the time necessary to master it. The growth of abstract journals renders a knowledge of German and French less essential than formerly was the case."

"I see no more reason for having German and French than for requiring Swedish, Norwegian, Spanish, etc. Why should we not be required to know all of these if we are to require French and German? For me to read German and French in a masterly way I would have to put two or three hours of time on it per day. What a loss of time that could be put to better use!"

"The United States has made such great advances in scientific work in recent years that it would be perfectly possible, in my opinion, for a doctor to do good work without any training in foreign languages whatever."

"The language requirement was at the time of my graduate study largely a technical requirement and a real reading mastery of the subject was scarcely required. I question whether the time spent on language by the average graduate student could not be spent to much greater advantage in furthering his researches in as much as but few use the language to an appreciable extent following graduation."

"While many workers find a knowledge of German, French, and frequently Latin, helpful and in some instances a necessity, there are undoubtedly a very considerable number who do not find such knowledge necessary, and these perhaps may never, after receiving the Ph.D. degree, make any use of any language other than English. Teachers not engaged in technical research can today keep themselves very well informed concerning all current work in their respective fields through the medium of abstracting journals. Therefore it is my opinion that examinations in foreign languages as a requirement for the Ph.D. degree, should be eliminated."

"German and French were of great value in quickly acquiring a reading and speaking knowledge of the Dutch and Malay languages—necessitated in connection with a 3 year employment by the Dutch government in Java. My colleagues there—mainly young doctors from Swiss, German, and Dutch universities—became more proficient in these languages, but according to the Director (a Dutchman), my specialized training in chemistry, physics and biology more than compensated when viewed from the angle of research achievement. Languages can be learned at any time, or place, or as necessity demands, but should never be allowed to crowd out opportunities of coming under the influence of great leaders who are of course mainly confined to the universities."

"I gathered during my graduate work (3 years in a university of church foundation and 3 years at a state university) that the language requirement for many science majors was an unnecessary burden to be gotten over with as soon as possible. In biological fields, *Biological Abstracts* is going to obviate much need of foreign language for English speaking people in the future."

"The teacher does not have time to read all of the English material. He had better spend the time on subject matter in his own immediate, or allied, or supporting fields. Botanists especially need a thorough grounding in chemistry and physics. In many cases, the language requirement stands in the way of accomplishing this."

There seems to be a quite general agreement that language requirements as they are now administered fail to accomplish what is implied in the requirement:

"In general the requirements and examinations are a farce, mainly valuable to create worry in the minds of students and to prevent them from getting their minds on other things until language exams are over. Either there should be something meaningful in such requirements or they should be abandoned."

"Much of the language requirement program in some institutions is a mere farce. I have been told by graduate students that their examinations were mere jokes. I feel that the language requirement should be made more rigid in many places. But I do think that it should be limited to translating knowledge."

"The present requirement is satisfactory if it is adhered to but apparently in some institutions where this requirement exists, it is not observed. I have known men shortly after they received the doctorate who could not read either French or German, although this was ostensibly required by the institution conferring the degree."

"If the examination be given by members of the language departments, there should be a sympathetic understanding of the *needs* for the language in research; i. e., the candidate is to have a *reading* knowledge, not the preparation for a linguist or grammarian. The language requirement, properly 'required,' should not be abolished in spite of 'abstracts' in English. If we only knew in Junior High School that we were going to be college professors with Ph.D. degrees! The language requirement would be fun down there!"

"I believe there is a tendency in Graduate Schools to regard the language requirement as an obstacle to be got around rather than surmounted. I believe that in general the examinations for languages should be conducted by the language departments and that a sound basic knowledge should be required rather than a mere ability to read a few pages from a technical journal."

"It should be made impossible for a person to cram French in two months and 'get by' with the language requirement as is often done at the present time. I know many Ph. D.'s who have passed language examinations, but who cannot read articles in French or in German in their own fields without great difficulty."

"Out of a large number of my acquaintances who hold doctors degrees from various institutions I know of only a few who are really at home with either French or German. In most cases the candidate was poorly grounded in the subjects before beginning his graduate work and by a little intensive cramming was able to pass the rather perfunctory examinations for language requirements. In most cases these men do not read either language in after years and usually depend on securing translations when badly in need of information found in papers in either tongue."

Various other points of view were presented of which these excerpts are fair samples:

"I would curtail the common practice of admitting students deficient in German and French to graduate schools before they have relieved this deficiency."

"A good reading knowledge of French and German should be *prerequisite* to graduate work."

"For much pure or applied science work I should not advise students to take French or German as undergraduates. Let them wait until they decide definitely that they are going on for graduate work before bothering about French or German. If they never go on there are many other subjects that would be more useful to them than those languages."

"In spite of the fact that more and more of the original contributions to Biology are recorded in English there is more need now for a knowledge of other languages than ever before. The need for German is particularly great for two reasons (1) most of the scientific papers published in Polish, Russian, Czech, Bulgarian, etc., have German summaries, (2) during the last few years the Germans have been particularly active in the publication of handbooks, cyclopedias and monographs of all kinds. I would estimate that at present about ⅓ of the original contributions in Biology appear in English and only about $\frac{1}{10}$ of the summaries and compilations of recent progress."

"There seems to my mind only one valid objection to the retention of the Ph.D. requirement. That is that the rapid broadening and specialization of the many fields of knowledge have pyramided until it is questionable how much we can validly demand in preparation for the Ph.D. degree, and whether or not the time might be more profitably spent on more intensive training in the fundamentals of the science which forms the major topic, or in broadening the training by requiring more work in related subjects."

"In addition to French and German some acquaintance with Latin should be demanded of all candidates for the doctorate."

"Were I to begin my studies over again, I would have taken the trouble to study in addition to the French and German such languages as Swedish, Italian and Japanese. I should also have studied Latin and Greek. The more I occupy myself with research in the biological sciences the more need do I find for foreign languages. However, foreign languages should not be studied at the sacrifice of mathematics, or the English language. An ideal candidate for the Ph.D. degree, no matter in what field, should be a linguist and mathematician."

"Some of the written questions for Intermediate B. Sc. and Hon. B. Sc. at the University of London are in French and German, these must be answered (in English) in order to get full marks. As soon as a student decides to specialize in science he should gain this knowledge. Extracts from German or French articles might be given, in examinations in advanced courses, to be explained or commented upon."

"Many Doctors of Philosophy of my acquaintance do not read French or German well enough so that they regard it worthwhile to try to read original literature in these tongues. Their knowledge is, in short, not good enough to be effective. My suggestion would be to fit the requirements to the needs of the special field much more than is being done now."

The foreign language question is quite evidently not settled for doctors in this field of physical science. They differ on the question all the way from those who would require from three to five languages, to those who would reject all language requirements in favor of a broader training in fields closely related to their major. On one point nearly all who commented on the question agreed: that present requirements do not operate to produce doctors who can with any facility use any language but their own.

CHAPTER III

Chemistry

The importance of chemistry as a field for teaching and research is evidenced by the large number of doctors with this major who returned replies to our inquiry, fully twenty-five percent of all returns being from this one field. Of the 590 chemists responding 560 were men and 30 were women. Their ages ranged from 23 to 58 years at the time of the report with a present average age of 35. The average age for receiving the Ph.D. degree was 29 years. The 590 doctors came from 23 universities.

Chemistry is the only field in this study claiming a larger proportion in research than in teaching, 279 chemists being engaged in teaching as against 300 in research, with 11 in other occupations. Slightly less than 2 out of 3 of the teachers are in universities, most of the other third being in colleges and normal schools, with 5 teaching in public schools.

English is the mother tongue of 551 of the chemistry group, 11 being bilingual and 28 of foreign speech.

Five hundred seventy-four of the number were examined in two languages, 5 in but one language, 4 in three languages, 7 making no report. French and German were the standard languages required, 2 being examined in Latin, 2 in Spanish, 1 in Scandinavian.

About 40 percent of the language examinations were required one year before the degree, about 30 percent before the preliminary examination and about 8 percent before examination on the thesis.

Examination in statistics was taken by 102 persons, in tests by 87 persons, in surveys by 201 persons, in formulae by 222 persons and in various other instruments by 114 persons.

About 6 percent of this group mentioned travel or study abroad.

USE MADE OF FOREIGN LANGUAGES

Table IV which follows shows the estimated amount of reading done in foreign languages by Ph.D.'s in chemistry during the periods indicated. In this field as in most others a considerable number of respondents were unable to state the amount in any

accurate terms. It was clear from explanatory remarks that German is used considerably more than French by chemists. The following are typical of the remarks made: "So much, I lost count," "A great deal of German, no French," "German used constantly, French never," "Numerous magazine articles," "Seminar so conducted that we were obliged to read both French and German," "Perhaps a page a day."

TABLE IV

USE MADE OF FOREIGN LANGUAGES

	DURING GRADUATE STUDY				DURING LAST TWO YEARS			
	No. Persons	Books Read	No. Persons	Pages Read	No. Persons	Books Read	No. Persons	Pages Read
German...	78	1–20	322	1–2000	68	1–10	289	1–1000
	25	20+	42	2000+	12	10+	45	1000+
French....	69	1–10	327	1–1000	38	1–5	268	1–1000
	8	10+	19	1000+	8	5+	24	5000+
Latin.....	2	3–10	1	5	1	5	1	500
Spanish...	2	2	4	1–200	...	.....	...	.....
			1	200+				
Italian....	2	1–7	32	1–500	4	1–2	15	1–100
							7	100+
Others....	4	1–10	10	1–500	1	1	3	1–100
			1	500+			4	100–250

It will be observed that 78 persons estimate having read from 1 to 20 books each in German, and 69 persons from 1 to 10 books each in French while in graduate study. Also, that 25 persons say they read more than 20 books each in German and 8 persons more than 10 books each in French during this period. The chemists make a better showing for the reading of foreign language materials in the last two years than do some other fields.

Table V shows the amount of formal language training received by members of the chemistry group. This table should be read: 57 percent reported 2.3 years of German in secondary school, 84 percent reported 1.83 years of German in colleges and universities; and so for the other items.

TABLE V

AVERAGE NUMBER YEARS FORMAL LANGUAGE STUDY

	German	French	Latin	Greek	Spanish	Italian	Other
Secondary School—	(57%)2.3	(27%)2.5	(50%)3.2	(5%)2.3	(2%)1.8	(.2%)4.	(.2%)4.
College or University—	(84%)1.83	(75%)1.5	(13%)1.97	(3%)2.	(4%)1.3	(.3%).6	(.2%)2.

Table VI sets forth the respondents' own estimate of their language skill during graduate study and in the period since. The first of these tables should be read: 22 percent of the 590 respondents claim an excellent mastery, 63 percent a fair mastery, and 15

percent a poor mastery of German during graduate study; and so on for the other items.

TABLE VI

ESTIMATED LANGUAGE SKILL AND ITS PERSISTENCE

	Skill During Graduate Study			Skill After Graduate Study		
	Excellent	Fair	Poor	Increased	Same	Decreased
German	22%	63%	15%	37%	32%	31%
French	20%	62%	18%	25%	35%	40%
Latin	12%	41%	47%	4%	17%	79%
Spanish	28%	28%	44%	20%	27%	53%
Italian	....	50%	50%	50%	37%	13%

According to the respondents' own estimate of their language skills they have distinctly better command of both German and French than the average. This judgment accords with the estimates in Table IV, which show a relatively large amount of foreign language materials read.

COMMENTS

Of the 590 chemists responding 448 added comments to their more formal answers, thereby manifesting a strong interest in the problem.

Taken as a group the chemists are strongly pro-language. Fully two-thirds of the 448 commenting on the question look upon German as essential—"absolutely essential" is the form most frequently used—to successful advanced work in chemistry. A smaller number, but still approximately half, place French on a par with German in their statement. Besides these languages a dozen others were mentioned as desirable, Italian heading the list with Russian, Spanish, Japanese, Norwegian, Latin, Greek, Esperanto, Swedish, Dutch, Roumanian following.

On the other hand, an appreciable number take pains to speak against Latin as having no utilitarian value worth considering to the chemist. French also has its critics who find it of less value than several other languages, especially Italian and Russian. A small minority, perhaps 30 or 40, would require two languages but allow the department and the student to determine which two.

A point strongly urged by a score or more, not against languages but against the examinations, was that students worthy of the doctorate and working in a department worthy of giving it will master whatever tools are necessary in language just as in other lines; and that languages not used as tools are never mastered anyhow under any requirements such as now exist. The requiring of one foreign language instead of two had a number of strong

advocates, the condition stated usually being that the required language be thoroughly mastered. Here as in most other fields a considerable number urged that the English language be given more attention.

Whole-hearted opposition was freely voiced not only to present language requirements but also to devoting graduate time to language study, as reference to the quotations from letters which follow will show. This opposition comes from a small minority (10 to 15 percent), but this minority expresses itself aggressively and may prove the nucleus of a growing discontent which will have to be reckoned with. It was frequently urged, for instance, that two years of study in each of two modern languages be required for graduate admission, this to be considered as meeting all formal language requirement. Many urged that whatever requirement is imposed shall be met not later than the beginning of the second graduate year.

Although, as was said, a majority of chemists look upon foreign language as necessary for research in their field, many of them are not satisfied with the language situation as it now stands.

"On account of the diversity of need for foreign languages in the various major subjects in which the Ph. D. degree is granted, I believe that it is not feasible, or desirable to attempt the introduction of any uniform language requirement for the degree. The individual departments granting the degree should determine what shall constitute a satisfactory mastery of the languages for the purposes of its own candidates, and as in the case for chemistry majors, where mastery has been demonstrated in either undergraduate or graduate courses presented by the candidate, a formal examination would seem superfluous."

"I have known of instances where the obliging professor has simply asked the candidate if he could read French and German. This sort of thing is due to the desire of some professors for graduate students and can only be handled by the examining committee. The crux of the whole language requirement lies with the major professor. If he himself discusses the contemporary work in the foreign languages he will create an interest that will result in the language not being a requirement any more but a necessity."

"In my own case the formal examination had no effect on my foreign language study. A much greater mastery of the foreign languages was necessary to carry out my research work than was necessary to pass the language examinations, both of which I took in fifteen minutes."

"The examinations were a farce. No candidate for the Ph.D. in chemistry could possibly get within gun shot of his degree

unless he could read German; he might get by without French. Assuming a competent major professor, the examination in the languages would appear to be unnecessary."

"Most language examinations for the Ph.D. degree which I have known anything about have been entirely too superficial. If the student has been 'exposed' to the language so that he can recognize the definite article and a few forms of the verbs 'to have' and 'to be' and has learned by heart some small book in his major field, he is too often credited with a reading knowledge."

"The examination should be given by the science department and not by the language department of the school for obvious reasons. I find many students who have practically no knowledge of German and expect to qualify for research on about one year of study (i. e., one year of a two or three hour a week course)! This is due to the lamentable fact that the instruction in German was abolished in secondary schools during the late war. As a consequence the question of language requirement for the Ph.D. is before us now."

"My conviction is that the language requirements of most universities are essentially valueless. If a man is interested in scholarship, he will automatically develop his reading knowledge of foreign languages. For instance, I find that where my interest is in the content, I can read involved German or French with great ease, while I can do nothing with matter in which I have only a casual interest. But to master a language for technical purposes does not require the intimate familiarity with grammar that is emphasized in most language courses."

"The amount of grammar necessary to an entirely practical knowledge of a language is demonstrated by the knowledge of English grammar possessed by the average working man in the U. S. today. A rather low level to shoot at but we are working in an utilitarian and not a classical age."

"Language departments in general suffer from the contemptuous, cancerous malady of feeling very sure that their field is necessary and sufficient for scholastic achievement in any field and the best form of missionary work which can be done is to squelch them properly."

"My experience personally and in the case of training research students has firmly convinced me that the fewer 'red tape' restrictions in connection with the mastery of 'reading knowledge' of a foreign language *for scientific purposes,* the better the result achieved. By all means the examination should be given by the members of the scientific faculty directly concerned."

"The language requirements as now administered in many institutions are unsatisfactory; in many cases the language tests

are perfunctory. The result is that many candidates approach these tests with the object of merely 'getting by' without actually acquiring a reading knowledge. This situation indicates a lack of conviction on the part of authorities that the language requirements are reasonable or necessary. A definite decision ought to be reached on this question and if two foreign languages are to be required, the tests given should actually require a reading knowledge."

Those who most strongly advocate the languages as a part of the Ph. D. requirement write such comments as the following:

"Languages are probably the easiest and pleasantest of any of the studies encountered in a university. Considering their practical as well as their cultural value, therefore, it would seem a shame to omit them."

"The degree ought never to be conferred on any one who has not a well-rounded education, entirely apart from the consideration of his specialized qualifications. To my mind, this is impossible unless the candidate is reasonably conversant with the modern languages."

"The question of language requirement cannot be separated from that of the general standard for the Ph.D. It seems reasonable to assume that the holder of the highest degree conferred by prominent universities (or by any university on this continent) is capable of forming independently a critical opinion on problems in his special field. He will be unable to do so if the greater part of the literature of his subject is available to him only through elementary texts and abstracts if at all."

"From the standpoint of so-called 'cultural requirements' alone a reading knowledge of French and German should be required of each candidate for the degree of Doctor of Philosophy."

"I believe that this degree should represent training in and constitute evidence of the ability to perform creditable research. It should be the academic stamp of a *productive* scholar. Anyone aiming primarily at teaching should not seek the Ph. D. degree. Unfortunately our educational institutions from the largest universities down to the smaller colleges have been demanding that candidates for faculty appointments have a doctor's rather than a master's degree. As a result there have been too many people offering themselves as candidates for the Ph.D. degree. Too many of these people have only slight inclination toward and little real ability to perform research. Compelled to jump the research hurdle in order to get the degree, they do so, and the dissertation is the last bit of research these people ever do. For those teachers who aim at being teachers some other degree should be given. If the master's degree no longer confers the proper amount of

academic distinction let a Doctor of Education degree or some other similar degree be given."

"We call these things Ph.D.'s, but they really are not that at all. The average so-called Ph.D. knows practically nothing except in his special field, instead of having also a general knowledge to fit the title. I am in favor of having requirement not only in language but also in other fields outside of the major subject."

"The requirements of a good grammatical knowledge, as well as a vocabulary suited to the major study in question, are practically indispensable to a man desiring a doctor's degree in one of the sciences. While it has been my lot not to have used the languages very much recently, I would feel rather lost and ignorant if I did not have a knowledge of them."

"I would like to see more emphasis laid on the practical reading knowledge early in the undergraduate course. It is my belief that a change in content and method of language teaching would energize the whole subject of the application of language to the scientific literature. The excess emphasis on grammar is largely wasted time."

"He is doomed to failure who cannot use these other tongues!"

Opposing the point of view presented by the foregoing excerpts are such comments as these:

"The language requirement should not be stressed too much. With the tendency towards books and review translation increasing the necessity of a knowledge of languages is decreasing. This is supported by the fact also, that most up-to-date corporations have on their library staff an excellent linguist, thus eliminating the necessity of their technical men to have the ability to be able to read foreign languages."

"Any man who is confronted with the necessity of reading these languages will meet the requirement in his own way. A formal examination does not enable the students to read these languages any better. I should like to suggest that the language requirement be applied upon entrance into graduate school."

"The knowledge of other languages, as for example, French and German, is a very nice thing to have for any one active in science, but it is also my impression that it is becoming less imperative with each succeeding issue of abstract journals, etc., which go a long ways towards fulfilling the needs of the casual reader of current literature. Then too, the monopoly that the U. S. has in certain fields of specific endeavor makes a knowledge of foreign literature of small moment. In other fields, foreign work *in the original* must of necessity be consulted and not be neglected."

"I do not advocate the requirement of a foreign language or languages as a prerequisite of a Ph. D. degree."

"So satisfactory is the work of abstracting scientific literature at present there is not the necessity of a thorough knowledge of foreign languages, as the reading is reduced to a minimum. But why German and French? Why not Dutch, Japanese, Italian, Scandinavian, etc.? I consider the ability to read one or more foreign languages a decided advantage, but think there are other things of as much or even more value—in view of the time required to gain such mastery."

"The need for foreign languages by chemists and engineers seems to me to be diminishing. Our own literature, abstracts, and hand books contain as much information as the average worker can find time to go over. Complete surveys in narrow fields may be obtained by the use of translators. Language requirements do not accomplish a worthwhile purpose at the present time."

"A good reading knowledge of French and German for the investigator in chemistry while desirable is not as important as in years past because of the excellence of American work and thoroughness of reference indices and abstracts."

"Now if I want a German article translated I send it to a translator. It is far cheaper and a more satisfactory translation is obtained."

"The candidate's ability in his major subject should be the only consideration in the award of the degree."

"As a student I had to look up and read many foreign language articles. Now, chemical abstracts will do most of this for you, and if you want any article entirely translated, it is a simple matter to have it done."

"I regard the study of Latin as absolutely unnecessary to anyone for Ph.D. work save possibly in the language field. It is useless from a practical standpoint and as taught today gives the student no appreciation of the literature of Rome whose language is indeed a dead one."

"Why should French be regarded as one of the official languages for the Ph. D. degree in any of the sciences excepting mathematics? It has outlived its traditional usefulness for the scientist."

"Very little of importance remains unreported in English or untranslated, in the field of chemistry. Research can be carried on in most fields of the subject with very little knowledge of any language other than English."

Here as in practically every other field there is grave dissatisfaction with present methods of administering the language requirement. Some who believe in the utility of the languages seem almost ready to forego the requirement because of its futility:

"It is my opinion that the language examinations required of Ph. D. candidates are not effective. True it is that they cause the candidates some worry but according to my experience the ability to read scientific German or French comes only through extensive practise. It would seem better, therefore, to put this matter entirely in the hands of the professor under whom the Ph.D. work is done."

"As far as my major field of chemistry is concerned, German is about 100 times more necessary than French. The department in which the candidate is majoring should have the right to determine just what, and how much languages the Ph.D. candidate should have."

"The languages should be taught over the last two years of undergraduate work or even in the graduate school."

"More courses of strictly scientific language for the purpose of creating a *reading* knowledge of the subject should be organized. Too often the teacher of 'scientific' language doesn't know the difference between a piece of apparatus and a division of science."

"I need German in chemical research and need it badly. French, in which I was proficient, I use very little in research and also in ordinary work."

"One year of both French and German in college and a scientific reading course (one semester each) conducted by an instructor in the candidate's major subject, would be adequate preparation for research in chemistry."

Other points of view are expressed in such items as the following:

"Taken during the candidate's undergraduate course, the languages would be of great value in teaching him *how to think* and thus tend to reduce the number of 'educated fools' annually turned loose from our universities. These half-baked individuals are the curse of their profession in the industries."

"I believe that one of the important reasons that America follows Germany in the physical sciences is that the American scientists are deficient in the German language."

"My work during the last seven years has been largely research administration in industrial process development and semi-commercial scale research. At the present time I have 30 research men working under my direction. I have men in the organization who

can translate readily, and I practically never have time to do this myself."

"The potential probability of one with Ph.D. training using either French or German in reading technical articles in science and engineering, even for no more than ten pages in later life, and the potential value from checking references in foreign languages justifies retention of both French and German as the language requirement."

"I do not see any reason for more specific requirements for French and German in my field than for (say) the Calculus."

"The granting of a Ph.D. does not indicate a man has made some extraordinary addition to human knowledge. It is merely a sort of guarantee on the part of the university that the man is in a position to put forward the boundaries of human knowledge in his particular special field. Since knowledge is not a national or local affair, it is obvious that, if he is confined to the use of a single language, he can do very little in this pushing forward of the limits of human knowledge."

"Modern chemistry is rapidly approaching the situation where anything worthwhile is eventually published in English. Hence I feel that the importance of foreign language is decreasing. The use of the German and French will never be unnecessary, however, and in view of the cultural advantage which they have for any student."

"In other departments where a reading knowledge of certain foreign languages is not essential I see no good reason for upholding the requirement. For certain social sciences, perhaps, it would be as foolish to require a knowledge of French as it would be to require a knowledge of calculus or chemistry."

"I was only asked whether or not I could read German and French by the Ph.D. examiner. My reply in the affirmative settled this point. I see no reason for an actual examination in these languages but only a moderate requirement in number of courses taken."

"In addition to the customary French and German requirements, workers in physiology or biochemistry should have Italian and if possible Norwegian or Russian. Certainly Latin deserves more consideration."

"The present writer might have been seriously handicapped at different times except for the fact that excellent scholars in both languages have always been at hand."

"In some cases the professor enters into a conspiracy with the student to evade the language requirement."

"The examination should not be entrusted to the language department alone."

"The Ph.D. language requirements are adequate, but I think the methods for acquiring these languages could be much improved."

"The main value of the knowledge of all foreign languages, both ancient and modern, is best determined by finding out in each case to what real use such knowledge can be put. Common sense should govern the requirements. Sanskrit is to the electrochemist as electrochemistry is to the student of Sanskrit."

"No special or formal examination in the modern languages was given at ———— when I was there. All candidates for the Ph.D. degree were required to attend seminars, the assignments for which were usually in German or French. A student's satisfactory completion of a seminar course was the real examination in the language."

"I think such language requirements could very well be abolished. If one needs a language for the work he is interested in, he'll learn it regardless of examinations, and if he doesn't need it, he'll probably do as I did with the French—cram it and bluff through."

"A certain flexibility in rules should be allowed and that the professor in charge of the major subject should, at his discretion, require a candidate to prepare and present himself for examination in German or French at the time the professor decides will be most satisfactory for the student's work."

"I prefer the system of assigning work of a nature that requires the student to read the literature in more important languages, and to show that he has so read; than the system that requires him to take an examination at a stated time."

"Today the Ph.D. degree has lost its significance as a badge of broad educational attainment and culture. It has degenerated to being merely the mark of a specialist in a restricted field. It represents training in a special field rather than education and culture. Anything directed toward regaining the broader aspects of the degree should be welcomed. More attention to languages should play its part toward that end."

"If the language people would simplify the spelling and grammar of the English language it would soon become the world language at least for intellectual studies and all our difficulties would be over."

"It would be a distinct economic saving to have more complete abstracting of foreign language publications."

Many additional comments were available and might have been included in each of the groups given above. The impression from reading the whole set of returns was distinctly that the chemists are sure (as a class) that they need German, at least. Probably a score state that French proves of little practical value. That rather general opposition exists to the present requirement and its comparatively futile outcome, is evident in letter after letter. With the disaffection that already exists; with the growing importance of American research; and, with the expanding publication of English extracts, there is reason to believe that scholars in this field will increasingly tend to lose interest in formal language requirements.

CHAPTER IV

Economics

From the field of economics 145 doctors of philosophy reported, 136 men and 7 women. The present age range of this group is from 28 to 73 years with an average age of 39 years. The Ph.D. degree was taken at the average age of 32. Sixteen universities were represented.

The present occupation of 110 of this group is teaching, of 30 research, 1 is a rabbi, 1 a minister, 1 a mother, and 2 make no report. Eighty-one of the teachers are in universities, 28 are in colleges or normal schools, and 1 makes no report.

English is the mother tongue of 128; 13 are of foreign speech, 4 are bilingual. One hundred thirty-seven out of the 145 were examined in 2 languages, 5 in 3 or more languages, 1 in but 1 language, and 2 make no report. French led with 141 in its examinations, German had 136, Latin 4, Spanish 8, and Italian 1.

Fifty-one were required to take their language examinations 1 year before the degree; 63 before the preliminary examination; 15 before examinations on the thesis; the remainder at unspecified or at irregular times.

One hundred thirty-two of these economists report having been examined in statistics, 79 in tests, 10 in surveys, 12 in various formulae, 27 in other technical lines as law, accounting, graphics, mathematics, research, and business contracts.

Travel or study abroad was mentioned by 25 persons.

USE MADE OF FOREIGN LANGUAGES

The caution is here repeated that tables such as Table VII following represent only very general estimates, and these from only a part of those reporting. Their value is only in the showing of very general tendencies. Some explained that "books read" did not necessarily mean that *entire* books had been read in all cases. Comments made by those who did not undertake to report the amount by specifying the number of books or pages covered are typified by the following: "Practically never read either French or German"; "Use both French and German continuously"; "Read none"; "Assignments were regularly made in German"; "Read both

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French and German books extensively in preparing for the examinations but after these were passed made no further attempt to read either language''; ''Crammed a good deal for my examinations in these languages but have little knowledge of either''; ''Use neither language except to translate foreign letters''; ''I glance over articles occasionally''; ''Have considerable sporadic use for German and French.''

TABLE VII

USE MADE OF FOREIGN LANGUAGES

	DURING GRADUATE STUDY				DURING LAST TWO YEARS			
	No. Persons	Books Read	No. Persons	Pages Read	No. Persons	Books Read	No. Persons	Pages Read
German...	49	1–10	38	10–1500	12	1–5	17	12–500
	6	11–100	3	1500–3000	7	10–50	4	600–4500
French...	44	1–5	27	12–1000	16	1–5	18	10–500
	11	6–30	7	1500–3000	5	8–20	4	1000–3000
Latin.....	2	2–5	2	20–200	...	.....	1	6
Spanish...	3	2–12	1	700	1	4	1	1000
Italian....	...	.....	1	1000	...	.....	...	.....
Others....	1	2	4	20–500	1	4	1	500

Probably all will agree that the reading done in foreign languages as shown by Table VII is far from negligible. Yet in amount it is hardly impressive. It is to be noted also that the amount of foreign language reading for the past two years is considerably less than for the period of graduate study. German and French are the major languages.

Table VIII shows the amount of formal language training had by this group. The table should be read: 50 percent of the respondents report 2.34 years of German in secondary school, 77 percent report 1.95 years of German in higher institutions.

TABLE VIII

AVERAGE NUMBER YEARS FORMAL LANGUAGE STUDY

	German	French	Latin	Greek	Spanish	Italian	Other
Secondary School—	(50%)2.35	(26%)2.9	(41%)3.3	(6%)2.8	(3%)2.2	.....	(1%)1.
College or University—	(77%)1.95	(68%)1.65	(22%)2.	(7%)1.9	(8%)1.9	(1%)1.5	(1%)1.5

Table IX which follows sets forth the respondents' own estimate of their language skill during graduate study and in the period elapsing since. The table should be read: 16 percent of the 145 respondents claim an excellent mastery, 44 percent a fair mastery, and 40 percent a poor mastery of German during graduate study; and so on for the other items.

TABLE IX

ESTIMATED LANGUAGE SKILL AND ITS PERSISTENCE

	Skill During Graduate Study			Skill After Graduate Study		
	Excellent	Fair	Poor	Increased	Same	Decreased
German	16%	44%	40%	17%	22%	61%
French	19%	56%	25%	21%	38%	41%
Latin	8%	52%	40%	3%	14%	83%
Spanish	46%	15%	39%	11%	22%	67%
Italian	....	67%	33%	....	....	100%

It is to be recognized, of course, that the data on which this table is based were entirely subjective, consisting only of each person's estimate of his own skill. They should, therefore, be interpreted only as indicating general trends. Whether the degree of skill indicated meets the requirement of "a ready reading knowledge" may be questioned.

COMMENTS

Doctors in the field of economics do not in the main strongly advocate foreign languages on the ground of their immediate practical utility. Out of 145 returning questionnaires 114 add comments on the language requirements. Of these only 12 percent mention German and French as essential to advanced scholarship in economics. Against these, 18 percent say they have found the languages not worth the time spent upon them. Outside this group are a dozen others who say that at least a part of their failure to make more use of foreign language is due to lack of sufficient mastery to make it a working tool.

Nineteen percent would either keep the requirement as it is or make it more rigid. Twenty percent advocate foreign language on cultural grounds or as a protection to the Ph.D. degree. Six respondents speak of requiring two languages, but not necessarily German and French. Five would require German only, and 14 would require any one language. Twelve percent suggest making the requirement suit the needs of the field studied, not asking for uniform requirements.

Spanish, Italian, Russian and Esperanto were mentioned as desirable acquisitions.

Especially noticeable is the neglect or failure of this group to defend the languages as a necessary research tool, as was done by those in mathematics and some of the physical sciences. In economics the plea was mainly general, cultural, what-not, instead of practical. An appreciable number excused themselves for allowing their language skill to lapse, on the ground that significant materials touching their field are lacking in foreign languages.

Let us first note a few typical comments favorable to a language requirement:

"It would be quite possible to adequately qualify for a Ph.D. without comprehension of a foreign language, but the grasp obtained would never be quite the same as when supplemented by a perception of the approach of people brought up in another country, under different conditions and with a different philology. Any educational advance obtained from a single point of view, the view of a single culture, lacks completion. Customs and laws of other countries are only comprehensible through a history of such country and its history can never be thoroughly understood without a knowledge of the development of its language and its syntax."

"I consider the foreign language requirement for the doctorate sound:

1. To enlarge sympathetic understanding of the viewpoints of other nations.
2. To make available significant material in the original.
3. To develop and encourage critical faculty in respect to foreign scholarship.
4. To overcome cowardice about acquiring foreign languages as tools of scholarship.
5. To facilitate the breadth of culture becoming a scholar.
6. To offset the American genius for technical perfection at the cost of breadth of grasp; alternative selections are almost inevitably specialities."

"These points are predicated on the absorption of the language as a part of permanent equipment rather than meeting a temporary requirement or acquiring a mechanistic tool. Also they contemplate the average student who is not in the genius class."

"The Ph.D. is being greatly cheapened by many of our colleges by letting down on such requirements. The Ph.D. is now little more than a good M.A. in many of our schools. Shall we grind out more and cheaper Ph.D.'s, or put a premium on scholarship, is the question?"

"I am in favor of foreign language requirements for the Ph.D. degree with the following modifications:

1. German and French should be required of all Ph.D. candidates at entrance to a graduate school or be acquired as soon as possible, if these entrants have not a settled major for field of study.
2. Those who have a definite field of study or major, should be permitted to offer some other language than French, e. g., Latin American Relations might suggest Spanish or Portuguese.
3. If field of interest requires two other languages, substitute them for German and French. It's a tool, so let it be a tool."

"We are likely to cheapen the Ph.D. if we tamper much with requirements. And while I seldom use French or German in my work, nevertheless I believe it is a good requirement, particularly French."

"In my own case, the highly specialized subject of research and the pressure of time made it impossible for me to extend my research to foreign language literature; but I regard my case as exceptional."

"The requirement of a reading knowledge of foreign languages for the Ph. D. degree should be maintained because the growing importance of the United States in international relations makes it necessary for every person who claims to be informed, to be able to read intelligently some foreign language. I think this (two foreign languages) is a reasonable rule. In the interior of the country the reason for this view may not be apparent, but in the East where one comes in contact with international problems every week it is highly essential, in order to have an intelligent view of contemporary events, to have a reading knowledge of some foreign languages."

"If I had my way I would make ability to carry on a conversation in Esperanto and at least one spoken foreign language a requirement of graduation from a *secondary* school. Children who are restrained by severe parents from being childish at the right time, often break out in strange childish freaks later. This wild language performance just before a Ph.D. degree looks like a return to juvenility at the expense of really important things."

"I consider this questionnaire another illustration of the wasteful confirmation of the obvious. I can't see how the question of languages can possibly arise in connection with the Ph.D. If the degree is to stand for scholarship—(or what else can it mean) then the supposition that scholarship is possible with limitation to one language is preposterous."

Another side of the picture is shown in such comments as the following:

"I would use my German more except that we have had a German translator who can do the work more rapidly, and explain the abstractions."

"To be honest with myself, I must confess that my foreign languages have been of little or no professional service to me in economic research. I should say that English, mathematics, and statistics, are far superior as tools."

"I have given not a little thought to the problem of the language requirement for the Ph.D. degree. As a consequence of that thought, of my own experience, and of rather broad observation,

I am convinced that the language requirement is thoroughly undesirable. The great majority of candidates approach their graduate work with no working knowledge of a foreign language. When the situation demands, they 'cram' in preparation for the examination and when they finally get through, toss the material aside in disgust and use it effectively not at all. The only result, therefore, is that they have spent a great deal of time upon the study of languages which are no effective value to them later, time which might better have been devoted to the prosecution of their graduate work. For the average student who is not 'brought up' on languages in high school and college, I am convinced that the language requirement is a very real evil. For one lacking that language background to acquire a reading knowledge and maintain that skill would demand an amount of time out of all proportion to its value. It will be much more economical for the typical man with a doctorate degree to hire some language scholar to translate for him important articles in other tongues than to spend the time necessary to acquire and maintain a knowledge adequate to intelligent translation. My own observation convinces me that were it not for the strategic position of languages on university faculties and the difference in the preparatory and college training of the young man today as compared with the younger man of thirty years ago, the language requirement would long since have gone by the board."

"The requirement is antiquated and indicates only the medieval point of view of graduate schools. If it is to be retained it should be more adequately administered and candidates should have facilities for preparatory study. Mine was a 'task' not a 'tool'."

"I think that the present language requirements are unreasonable and their administration farcical. A large proportion of graduate students in the social sciences, in my opinion, just learn enough French and German to 'get by' and my information is that it usually doesn't take much. The present situation is not satisfactory. Either candidates should be required to have a genuine reading knowledge of the languages in which they are examined or the requirements should be abolished, or, at least, restricted to one language, which they should be able to use. I have no personal grievance against the language requirements. Passing them was the easiest part of my graduate work. I took French and German in a liberal arts course as an undergraduate because I wanted to understand the languages and something of the literature and I have felt amply repaid for the effort. But I have made little use of them in my university teaching, perhaps because I have been working in fields in which the literature in English is so abundant and so essential that one doesn't find time or occasion to search foreign languages for materials. In my opinion, otherwise capable graduate students of economics, accounting, business administration and government shouldn't be debarred from the Ph.D. for failure to obtain a reading knowledge of French or German."

"It is a great waste of time to require a reading knowledge of two modern languages when so few men holding Ph.D. degrees make any use of it. Out of several dozen men who have taken the Ph.D. degree, and with whom I have associated rather intimately, only three make any use of their knowledge of foreign language. Out of a group of 22 who applied for the German examination 10 of us passed."

"For me, the language requirements were almost entirely a waste of time. I find the same idea expressed by the majority of my colleagues. The languages, it seems to me, should be required where one is working in a field, the literature of which, is largely in a foreign language. There are, however, many fields where the literature is mainly in English or where the best works have been translated into English and there is very little need for reading foreign languages to keep up in the field. I shall always regret the time I wasted in learning to read my languages when most of the important literature was in English and I might have been utilizing my time better in studying and reading in my field more."

"To my special line of research—in a field hitherto unexplored—the language requirements were mainly hurdles to the degree, and took much time that could otherwise have been very profitably employed. On the other hand, for certain types and fields of research work, a knowledge of the language in which the most valuable documents can be found, is clearly indispensable. The idea back of the requirements that the languages ought to be required so that when needed, if ever, the research worker would be well equipped, is distinctly a mistaken one. For, I find that I have forgotten my German so badly that the time required to read the German book is too great. I can easily have the significant part abstracted by those who have specialized in German. For certain lines of research the requirement more properly should be some of the technical or specialized instruments, rather than foreign language."

"I am thoroughly convinced that at present much valuable time is being wasted on languages that 'fail to stick'."

Many respondents direct their criticisms not against the languages themselves but against the system as it works out.

"There is only one way to enforce this language requirement. Let every Ph.D. candidate take a stiff course in his major or a related graduate field taught entirely in the foreign language—lectures, class discussion and reading—and be required to write his examinations or take orals in the foreign language. The present requirements are a farce."

"As usually administered it is of little value. It is a relic of days past. In my field there is scant use made of any language

but English. I feel that the time could usually be spent to better advantage otherwise."

"For many fields, such as my own, I believe the time of a graduate student could be used to better advantage than in preparing for language examinations."

"In view of the present standards of examinations in these subjects for the doctorate I am very skeptical of their value. If the language requirement is to be continued, I should think that a requirement of one foreign language with a much higher standard of examination would be more satisfactory than the present system. The situation, of course, varies from subject to subject but, in my judgment, such a knowledge of a foreign language as is needed to pass the usual doctorate examination is of very little use."

"The chief difficulty with the language test at the present time is the laxity in its enforcement. Many candidates at———— submit themselves for the test after studying a language for three or four months. The results, of course, are ridiculous. The language requirement should be enforced, otherwise dropped."

"I have wondered often about the language requirements for Ph.D. men—so many of my friends have gone through with even less than I. One man with no knowledge of French did intensive work with his wife, who was good at it, and passed his French after *eleven* days of preparation. One of my senior professors used to remark that if you had to use the dictionary for every page you did not know the language. When the examiners give you work knowingly within the pages you have already read, and sometimes make an assignment and then give you half an hour or more to bone up on it, and then give you a lift over the hard spots —I can't see that such an examination really amounts to anything. The Ph.D. requirement in languages should follow in the wake of Latin and Greek requirement for the A.B., or else it should be made into a real tool."

As nearly as could be judged the several pages of comments here quoted represent fairly the diverse points of view of the economics group. If this is true the Ph.D. language question seems far from settled in this field.

CHAPTER V

Education

Twenty universities were represented by the 323 doctors with majors in education who made returns in this inquiry. Although women far exceed men in the numbers engaged in education as a vocation, only 7 women doctors appear in this list as against 316 men.

Doctors in education receive their degrees later than those in most other fields, the average age for taking the degree in education being 37 years. The present age range of those reporting was from 24 to 66 with the present average 42 years.

Of the 323 reporting 248 are engaged in teaching, 73 are engaged exclusively in research, while 2 have entered other occupations. Of those teaching 60 percent are in universities, 31 percent in colleges or normal schools, and 9 percent in public schools.

English is the mother tongue of 302, 6 are bilingual, and 15 of foreign tongues. Seventy-six percent of this group were examined in 2 languages, 12 percent were examined in 1 language, 5 percent in 3 languages, and 7 percent made no report. In the aggregate 275 persons were examined in French, 260 in German, 10 in Latin, 14 in Spanish, and 5 in other languages. One hundred fourteen reported taking the language examination 1 year before the degree, 78 before the preliminary examination, and 81 prior to examination on the thesis.

Technical instruments other than language in which examinations were passed by members of this group were as follows: statistics by 293; tests by 243; surveys by 253; formulae by 87; other instruments by 10.

USE MADE OF FOREIGN LANGUAGES

The data given in Table X following represent the estimates made by the number of persons specified in each instance of the amount of reading done in foreign languages during their period of graduate study and during the last two years. Not all were able or willing to put their estimates on this qualitative basis. Some contented themselves with such statements as "Very little;" "Read frequently in German, little in French;" "Read occasional journal

references;'' ''None whatever;'' ''Almost nothing available in my field.''

TABLE X

USE MADE OF FOREIGN LANGUAGES

	During Graduate Study				During Last Two Years			
	No. Persons	Books Read	No. Persons	Pages Read	No. Persons	Books Read	No. Persons	Pages Read
German	54	1–6	50	2–500	15	1–5	29	1–500
	8	9–350	23	650–40,000	5	6–65	5	600–20,000
French	63	1–7	66	15–500	16	1–5	38	3–500
	5	12–40	19	600–12,000	5	6–40	6	1000–2000
Latin	8	2–50	6	50–500	2	2–3	2	100–1000
			3	1000–6000				
Spanish	3	2–5	2	10–200	1	3	3	35–1000
			3	900–1000				
Italian	1	2	1	5	...	.....	...	.....
Others	3	4–50	3	500–2000	2	1–6	5	15–1000
					1	24		

From Table X two things are evident: advanced students in education do not make extensive use of foreign languages in the graduate school; they make even less use of them after receiving their degree. On the last point they are in accord with doctors from practically all fields.

In Table XI is shown the amount of formal language instruction received by persons of the education group in secondary and higher schools. The table should be read: 34 percent of the 323 reporting had German an average of 2.2 years in secondary school, and 56 percent had German an average of 1.67 years in college or university; and so on.

TABLE XI

AVERAGE NUMBER YEARS FORMAL LANGUAGE STUDY

	German	French	Latin	Greek	Spanish	Italian	Other
Secondary School—	(34%)2.2	(24%)1.8	(50%)3.2	(12%)2.6	(1%)4.		(1%)2.6
College or University—	(56%)1.67	(45%)1.3	(27%)2.5	(17%)2.2	(5%)1.5	(1%)1.	(2%)2.3

Table XII sets forth the respondents' own estimate of their language skill during graduate study and in the period elapsing since. This table should be read: 10 percent of the 323 respondents claim an excellent mastery, 52 percent a fair mastery, and 38 per-

TABLE XII

ESTIMATED LANGUAGE SKILL AND ITS PERSISTENCE

	Skill During Graduate Study			Skill After Graduate Study		
	Excellent	Fair	Poor	Increased	Same	Decreased
German	10%	52%	38%	7%	21%	72%
French	13%	58%	29%	7%	25%	68%
Latin	22%	42%	36%	4%	31%	65%
Spanish	24%	47%	29%	12%	21%	67%
Italian	....	....	100%	....	....	....

cent a poor mastery of German during graduate study; and so on for the other items.

The foregoing data show that educationists do not rate their skill in the languages as very high while engaged in graduate work. And they are quite frank in admitting marked decrease following graduation, in such skill as they once possessed.

COMMENTS

Education was the largest of the groups reporting except chemistry. Of the 323 doctors returning questionnaires, 274 added comments to the more formal data.

The supposition in some quarters that educationists are uniformly against language requirements for the doctorate does not hold. Thirteen percent of those adding their comments advise maintaining the requirement of German and French. One or two percent more would make these requirements more stringent. Another 13 percent would keep a language requirement for its cultural value or to protect the Ph. D. degree. About 3 percent stand for one language instead of two, and the making of this into a well-mastered tool. A dozen languages other than German and French were mentioned as having been found of service in particular studies.

That this group found foreign language of but secondary importance as a tool in the pursuit of their degree and that they still find it so in the prosecution of their occupation, come out clearly in the returns. Twenty-three percent definitely report that on the practical side language study has failed to return value for the time spent on it. Sixteen percent urge that other technical tools than language are of more value to most fields of education.

Strongest of all emphasis, however, was the demand that all general or stated requirements shall be removed, leaving each particular case to be decided in accordance with its demand for technical tools. More than one-third of all comments brought out the need for this reform in present practice. Especially was it urged that in many phases of educational research practically no valuable literature in foreign tongues is to be found, a fact that makes it impossible to use the languages in any fruitful way.

Related to this point of view it was frequently brought out that certain technical tools which require extended study and practice, such as statistics, surveys and other research methods, are now essential and that to require both these and the languages

takes too much time from content subjects. In this connection several urged caution with regard to statistics, saying that this technique is no more needed by all than are the foreign languages.

A large proportion of education majors look upon the foreign language requirement as either (1) a traditional hang-over which we are not yet sufficiently scientific minded definitely to put aside; or (2) a convenient, if costly, hurdle deliberately maintained as a means of discouraging the less able or heroic of the applicants for the Ph.D. degree.

A considerable number of those taking the latter point of view believe that more effective barriers to the incompetent can be found than the languages. Especially is this thought to be true with language tests as slack as they are now, many candidates "passing" who have studied the language only a few months, often without even a tutor. Such a hurdle, they argue, has no great terrors even to those with an I Q expressed in two figures.

Let us first note comments from those who stand for a language requirement for the degree:

"With the renaissance of educational progress in Europe in the last few years, French and German are becoming more and more essential for successful thinking in the field of education."

"I have met Ph.D.'s who appear lopsided in point of view and of method because of a lack of the broad contact given by a ready knowledge of these languages."

"The German-French reading requirement should stand. Anything to counteract the narrowing influence of specialization without learning the spirit of intensive research may well be encouraged."

"I am raising two questions. First: Should not the Ph.D. in education stand for a somewhat wider type of scholarship? Second: Granting that the linguistics have no particular vocational significance, is it not true that some tests of scholarship other than mere time requirements need to be imposed? I see no particular relation between statistics and surveys and linguistic requirements. Any person of fairly wide teaching experience and ordinary intelligence can usually acquire a sufficient technique in either of these in three months, which no one can very well do in the case of any foreign language."

"I still believe in the German and French (or other foreign language) requirement for the Ph.D. degree simply and chiefly for the 'cultural and disciplinary' values or implications. I believe, however, in allowing the candidate an optional choice in the

Ed.D. degree (with *no* language requirement) as we have it in the University of California."

"There may be cases in which all language requirements should be waived but, so long as the degree stands for the highest type of a liberal education with breadth as well as height, I cannot see how the omission could be justified."

"Ph.D. men should have language training—otherwise they tend to become very provincial. Too many of that type now."

"Language requirements are justified on grounds other than the test of use as instruments of research. The Ph.D. would be cheapened by granting it to candidates who are limited to one language."

"It would be hardly fair to conclude that my work on German and French was useless because I did not read a book in either in a special field. One benefits in other ways."

"An educated man should know more languages than his mother tongue. As the world grows smaller and smaller it is decidedly to our advantage to know what our neighbors are thinking about. I say—require two languages but do not continue the hoax of requiring them for vocational ends unless, as in a modern language major or a history major, such need can be proved without doubt."

"In view of the great value of educational publications in the modern foreign languages, it is my judgment that all institutions that confer the Ph.D. degree on this side of the Atlantic should continue to require all candidates to have a good reading knowledge of both French and German. We are provincial enough at best without deliberately cutting off a prophylactic of this kind."

"It is a mistake to do the preliminary work on language and the thesis work at the same time. I should like to see a stiff preliminary examination (including a real reading knowledge of French and German) completed at least a full year before the thesis is presented."

"Graduate students of administration would be stronger were they required to read French so that they might follow developments in foreign countries, particularly in the secondary school field. Many of our administration men are provincial."

"Hold to the requirement. We need educated men for Ph.D.'s."

Opposing this general point of view were many such statements as the following:

"The requirement is a damned farce and ought to be done away with along with other traditional requirements."

"I consider the language requirement for *all* Ph.D. candidates a farce and a terrible waste of time."

"I believe my study of Latin in high school and college has been of fundamental assistance to me in my mastery of English. I consider the time spent in German and French in direct preparation for the degree requirements in foreign language as practically wasted. Any institution which is strong enough and independent enough to grant the doctor's degree without a language requirement will take a long step in the direction of better real preparation for life than is now secured through the farce of a requirement in languages."

"The Germans are doing some splendid things now in Education which I should like to know more about but it is a question of relative values. Shall I again spend several months in mastering the German language necessary to read the German educational periodicals, or shall I rely upon the translations which one is able to buy. I vote to buy the translations nor am I lazy minded either."

"In my case, my time could have been better used in further study of Education, English, and Social Sciences than in meeting the requirements in Foreign Language."

"Higher degrees in education should be separated entirely from academic degrees. The parallel is to be found in the graduate law school at the University of Chicago. Stanford has taken a long step in advance in this matter. At a recent dinner fourteen doctors present testified that they had never made any practical use of their foreign languages."

"As an *instrument of research in Education* neither language seems to me necessary—unless possibly in the field of History of Education. The question then remains whether something we might call 'cultural value' is important to teachers of Education despite lack of technical need."

"My students who complete the languages as a requirement all have the feeling that they have *wasted* their time. The language people take delight in holding this requirement as rigid as possible. If I had some foreign language to be translated I would take it to an expert just as I would take a job of plumbing to a plumber and a job of ditch digging to a laborer. I am not interested in being expert in any of these lines."

"It is possible that language training has a value outside of its use as a tool for research, but statistics has been worth much more to me as an instrument of research."

"The ———— Company of ———— will translate all the articles and books one may ask of them for the modest fee of $15 per year. Furthermore, it will be an accurate translation. Not one Ph.D. in one hundred can afford to use his time on foreign languages."

"I wish that instead of being required to spend my time on French and German in my graduate work I had been required to show a knowledge of the best things in the world of literature, art, music. If the typical Ph.D. is too provincial why not let him be examined on, say two or three hundred of the world's best books rather than on a reading knowledge of two foreign languages. I hope that the doctorate degree will not be made easier to get—it is already too easy to get; but I hope that the bars which the would-be doctor must jump will be established on a more rational basis than is the case today."

Objections on the ground of the educational futility of the present requirement as it is administered were frequently expressed in such terms as these:

"The futility of present systems is due to bad methods of teaching language. Get real teachers."

"It amounts to a requirement of dishonesty on the part of those who give and those who take the language tests. Language departments *must* pass men and the men must go through with the pretense. Few of the heads of departments in our leading universities can or do use foreign languages. Naturally their students think it unfair to expect them to do so. I think the universities should by all means clean up this situation. I would suggest a distinct degree, Doctor of Research, for those who are going in for research. Such persons should be required to show mastery of the instruments of research in their respective fields—in many cases this might not include the languages. Proper organization of Ph.D. work for college teachers would give us men about twice as well acquainted with their fields as those we now get."

"I think the language requirement of American universities imposed on candidates for the doctor's degree are a great joke as well as a tragedy."

"It is an antiquated relic of the middle ages. It is also a farce in the institutions (four universities) where I have taught."

"The language requirements are more or less of a joke. It would be better to abolish the requirement outright or else make it worthwhile."

"My language examination was held after I had met all course requirements, passed the preliminary examinations and placed a first draft of my dissertation in the hands of the committee. My

time might have been spent much more profitably on the dissertation itself."

"In some universities the language requirement is used by the major department as a means of 'passing the buck' on to the language department in cases of candidates regarded unworthy of the degree. Such action, of course, is cowardly and dishonest."

"The French requirement was innocuous, and that in Spanish a farce. Requirement in statistics and surveys would have been far more valuable."

"Because of my ancestry I acquired the necessary command of German quite readily. My preparation in French was a joke. My professor listened to a little bit of very poor reading and signed my card. It isn't good for a student's morals to let him pass a superficial examination."

The following are typical of many comments bearing on the "hurdle" idea as related to the language requirement:

"Apparently the language requirement, like the so-called 'preliminary examination,' is a device used to eliminate the student who is for any reason considered incapable, or unworthy of the higher degree. It is perhaps too much to expect the faculty (or a committee) to convince every such individual by any process of interview or conference. This is not a painless method. In my judgment, every faculty should set up several such 'hurdles,' explaining them somewhat in detail in its published circular of information, thus making clear a determined policy to make its higher degrees worth striving for by capable men and women by maintaining high standards. Then the faculty should announce that it reserves the right to waive any one or more of these requirements, for cause, in the case of any individual, thus placing directly on each candidate the burden of proof of superior merit or attainments."

"The language requirement in my particular case was simply a hurdle to be jumped—nothing more."

"Requiring a student to pass language tests that take many hours of work to prepare so that one may be able to qualify is, it seems to me, a malicious practice, since the student may never use the language again. If a hurdle is desired could not something more practical be found? In the subjects where the languages are tools I am in favor of requiring them, but I believe we ought to show that we have some sense."

"The language requirement does act as a selective factor. The whole point here raised is how to select a group of Ph.D.'s such as an institution wishes to turn out. I believe more worthwhile means of selection might be set up than the foreign language requirement.

However, ability in foreign language and I Q correlate rather highly."

"I have been a college president, also a research man for the Carnegie Corporation. Am now an executive in the educational field. It is my judgment that the universal requirement of two languages for the Ph.D. is nothing more than a mere intellectual hurdle set up for the candidate and in popular terms is 'the bunk.' We have entirely too many obsolete traditions and customs in the academic field—including such nonsense as the cap and gown, etc. I suppose such pageantry is pleasing to some type of minds but it is exceedingly revolting to others. There are now professors at .....who refuse to join in an academic procession because of such medieval and traditional nonsense as is usually engaged in at convocation exercises."

"I consider it very doubtful whether any general Ph.D. requirements can be set up which may not be more of a deterrent than an acid in a considerable number of cases; this is certainly the case with respect to languages. I have seen 90 medical students pass a German examination. Not 10 of them can read German articles with enough facility to venture to do so. But they have passed the exam and are now free to go ahead with their medical work—in *English!* Yet the purpose of the requirement was to stimulate a keen interest in following current literature from the continent! I should like to see the students who do not seem to be likely Ph.D. material discouraged by a more frank and expeditious method than that of hiding behind numerous requirements, which they can spend several years in pathetically filling."

Many other interesting points of view were expressed of which the following quotations are samples:

"It seems to me extraordinarily stupid to require all candidates to show competency in any one or two instruments regardless of the necessity for such command by the candidate."

"Tremendous amount of time wasted in preparation for language requirements for Ph.D. could better be devoted to increased professional attainment. Only in one instance (and that in a minor—sociology) did an instructor ever make an assignment requiring the use of a foreign language, in all the years of my study in the graduate school."

"At Stanford the education degree (Ed.D.) has recently been set up. It does not require the foreign languages, but these may be demanded if faculty of school thinks students' program requires it. Much of the objection to the languages comes from men in Education who do not seriously attend scholarship as such, but rather administrative work, that does not require it, perhaps. These people should not set the standard for Ph.D. work in Edu-

cation. Better give them some other degree (Ed.D.?) and leave the Ph.D. to serious scholars. These need the languages."

"It has been my conviction for years, especially as a member of doctorate committees and sub-committees, that the linguistic requirement should be made very flexible, depending virtually on the nature of the research undertaken by the candidate and the specific problems faced in the writing of his dissertation."

"The instruments in which I was examined (statistics, methods of research) are necessary. I recommend the substitution of those instruments for languages for *most* candidates in the field of Education."

"I could have met the language requirements without any great difficulty, but I did not consider the return worth the effort as far as my major field was concerned. In place of the languages I offered 22 semester hours in statistics, and I still believe my decision was a wise one."

"I plead for as systematic as possible a classification of studies according to the instruments of research that are of practical value. Undoubtedly we will find subjects which might well require either language or other instruments, or both."

"Language requirements should be limited to those required as tools in the research undertaken for the thesis. If other tools are needed, such as statistics, they should be specified by the candidate's committee."

"An examination of the research that is being conducted in Education or has been conducted within the past decade would reveal an amazingly small percentage for which a language requirement was essential."

"We have accepted statistics for one or two languages. Law has been accepted as equivalent technique for certain researches. Now a man wants to offer agricultural training as a 'tool of research.' Where shall we begin and where end?"

"I doubt the wisdom of doing away with the foreign language requirements. At the same time my doubts are just as strong regarding the advisability of making every college boy go through a lot of drudgery because, mayhap, he will some day engage in research. I am a firm believer in the vocation principle of 'learning on the job.' If a college student has one or two years of French and German in college and finds later he needs either (or another language) for research purposes, he will gain the increased facility in the use of the language by reason of the added incentive for gaining additional power over the language. The complaint that I feel is justified against much of the present college instruction

in foreign language, is that the departments seem to take for granted that every one is taking it for the sake of the literature and not as a tool subject. I stopped my children from going farther in high-school French when they got over into plays, as one will major in history and another in natural science of some sort according to present indications."

"If one would seek solid scholarship, in so far as such scholarship is obtained by foreign contacts, the way to do it is to go to the country, learn the language and imbibe something of the spirit of its institutions. A brief and frantic review of foreign languages for the sole purpose of squeezing past the requirements for a Ph.D. degree will contribute little to one's scholarship. The time so spent often constitutes a serious reduction in work and study of the type which really does contribute to a man's preparation and breadth of understanding of his field."

"There is scarcely any language, including Polynesian (Hawaiian) and Bantu, which I have not found occasionally useful in research. While French and German are undoubtedly the most widely useful, their preëminence is entirely arbitrary. I have had students who found Russian, Italian, Spanish, Arabic, Coptic, or Bantu more useful than either. I think each department should have authority to require any subject needed as a tool of research; which might conceivably include no foreign language at all, and very often more than two; possibly neither French nor German. The requirement should vary with the individual research problem."

"The language requirement is simply a survival from a period when education dealt, not with facts, but with the fancied values of abstract scholarship as worthwhile in and of itself."

One sees from these excerpts that educationists are like other people in that they differ from each other. The significant note in their contribution to this study is not opposition to foreign languages, but opposition to the universal requirement of these languages (on paper) regardless of educational needs. The educationists are pragmatists—they want the language requirement to work or to quit pretending that it works.

CHAPTER VI

Educational Psychology

Thirty-two educational psychologists, 30 men and 2 women, returned replies to this inquiry. The degrees of these persons were conferred by 10 different universities. The present average age of the group is 38 with a range of from 29 to 51 years. The average age for receiving the Ph.D. degree was 32 years.

Twenty-eight of these doctors are engaged in teaching, 4 in research. Of the teachers 24 are in universities, 4 in colleges and normal schools, 2 of the latter are also teaching in public high schools.

The mother tongue of 28 is English, of 4 foreign. Twenty-seven of the 32 were examined in 2 languages for their doctorate, 5 were examined in only 1 language. Twenty-eight were examined in French, 26 in German, 1 in Latin.

Fourteen persons were required to take the language examinations 1 year before the conferring of the degree, 6 before examination on the thesis, 12 prior to the preliminary examination.

All members of this group report having been examined in statistics, 13 in tests, 27 in surveys, 13 in formulae, 3 in other technical instruments.

USE MADE OF FOREIGN LANGUAGE

The data given in Table XIII below show the estimate of the respondents of the amount of reading done in foreign languages during the two periods indicated. It is to be remembered that these are but rough approximations. Most of those who did not undertake to estimate the number of books or of pages read make some explanatory statement such as the following: "Use German periodicals frequently and perhaps half a dozen books;" "Use two German books as a text;" "None suggested or required by my instructor;" "None;" "Occasional articles or reviews;" "Use the languages in translating odds and ends of quotations;" "Foreign field has little in comparison with American;" "The point is not whether I *am* using the languages. I at least *can* use them."

The estimates in this table show that at least some use was made of German and French while in graduate study. That foreign

TABLE XIII

USE MADE OF FOREIGN LANGUAGES

	During Graduate Study				During Last Two Years			
	No. Persons	Books Read	No. Persons	Pages Read	No. Persons	Books Read	No. Persons	Pages Read
German	10	1–6	10	10–300	6	1–3	6	4–150
	5	10–30	2	600–1300	1	15	2	300–700
French	11	1–6	6	20–100	2	2	4	4–20
	2	50	3	350–500	2	5–10	2	55–200
Latin	...	.....	...	.....	...	.....	...	.....
Spanish	1	40	...	.....	1	3	1	50
Italian	...	.....	...	.....	...	.....	1	100
Others	...	.....	...	.....	1	4	...	.....

language reading is not being kept up is evident from the sharply decreased estimates for the last two years. On the whole educational psychologists seem to make relatively little use of German and French and practically no use of any other foreign language.

Table XIV shows the amount of formal language study had by this group. The table should be read: 50 percent report 2.2 years of German in secondary school, 75 percent report 2 years of German in higher institutions; and so on.

TABLE XIV

AVERAGE NUMBER YEARS FORMAL LANGUAGE STUDY

	German	French	Latin	Greek	Spanish	Italian	Other
Secondary School—	(50%)2.2	(25%)2.4	(34%)3.8	(3%)9.	(6%)1.5	.....	.....
College or University—	(75%)2.	(56%)1.55	(18%)2.6	(9%)3.3	(6%)1.	.....	(3%)1.

Table XV represents the respondents' own estimate of their language skill during graduate study and in the period elapsing since. This table should be read: 28 percent of the 32 respondents claim an excellent mastery, 41 percent a fair mastery, and 31 percent a poor mastery of German during graduate study; and so on for the other items.

TABLE XV

ESTIMATED LANGUAGE SKILL AND ITS PERSISTENCE

	Skill During Graduate Study			Skill After Graduate Study		
	Excellent	Fair	Poor	Increased	Same	Decreased
German	28%	41%	31%	11%	36%	53%
French	17%	66%	17%	10%	20%	70%
Latin	20%	40%	40%	20%	40%	40%
Spanish	....	....	....	....	....	....
Italian	....	....	....	....	....	....

According to the estimates in this table the educational psychologists at no time averaged better than "fair" in languages, and that ability has decreased since leaving the graduate school.

Did they, on the average, ever have "a ready reading knowledge" of the languages certified for them in the graduate school?

COMMENTS

As one might expect, the educational psychologists take account of individual differences and of functional needs in prescribing technical requirements for the doctorate. They are strong for letting the need of the student settle the question. A considerable proportion of them believe in the necessity for mastering one or more languages, but practically all are against a formal blanket requirement of two foreign languages.

Of the 34 psychologists reporting, 27 volunteer comments and only 2 come out squarely and assert that German and French are universally essential for doctors in this field. Against this, 7 doubt whether time spent in mastering foreign languages is well spent. Several advise stopping the present farce of setting up a requirement which fails to function. It is urged by scholars in this field as in several others, that languages which have practical value in particular courses or problems shall be used in such a way as a tool that mastery shall be made certain.

Examples of those favorable to languages as a tool are typified by these excerpts:

"I can't imagine anyone without an exact knowledge of at least two languages feeling competent either to instruct students in a university or to prosecute any kind of research. It seems to me the first fundamental of scholarship."

"I would require just one foreign language and require a mastery so thorough that the student reads with the same ease and fluency that he reads his mother language, so that reading will be such a pleasure, such a genuine research tool, and such a valuable professional asset that this superior mastery will be maintained to the end of life. This is the only kind of mastery that is worth anything to scholarship. To require such a mastery of two foreign languages is unreasonable and will inevitably result in low standards of mastery. I feel very strongly on this point. I regret exceedingly that stupid educational advisers distributed my study of foreign languages over about all the languages there are except Eskimo whereas all these years concentrated on *one* foreign language would now be a source of profit and pleasure to me personally and would make me a valuable intermediary for one foreign science and culture. As it is, my present mastery is merely a source of irritation to me and of profit to nobody."

"Requirement should not be a blanket thing for everybody. Differentiated requirements based on needs of men in the field. However, certain languages are very important for most subjects."

"Instead of lowering standards to allow more riff-raff to achieve distinction, we should tighten requirements and make the Ph.D. a real degree conferred upon those who show true ability in research."

"The languages are marks of 'culture' of a sort that a Ph.D. is traditionally supposed to possess. They serve as convenient excuses for deans and other administrative officers who wish to eliminate certain candidates on purely technical grounds. They are in the nature of rough intelligence and capacity tests to determine the stamina of the candidate—that is the less robust will fall by the wayside providing the race is long enough."

Following are illustrations of opposing points of view:

"Little real use made of the languages in a systematic or extensive way by the average Ph.D. Much valuable energy wasted by the candidates in getting ready for the language examinations and in meeting a purely formal requirement at a time when the student should be doing something else. Rules differ so greatly in different schools and departments with respect to details of the language requirements that genuine and serious inequalities seem to exist within the walls of the same university."

"I firmly believe that the time and energy in meeting the language requirement for a Ph.D., other than in the departments of the languages themselves, is entirely wasted in most fields if not all. This time could be more profitably diverted to more fruitful channels."

"Knowledge of certain foreign languages is essential for high standards of Ph.D. work. The languages need not be German and French for every subject and sometimes a student may require one combination, while another student would need a different combination. In Psychology, German seems especially important and French ranks next, though Italian and Spanish are sometimes desirable."

"The language requirement has had a place in the past in many of our fields of research as a vital tool. It was necessary to turn to the literature of other lands to find what was being done there. At present a vast amount of research work can be done in our own land by use of the English language only. But there are other *tools* at present needed even more than foreign languages, especially in education and psychology. Statistics and tests and surveys meet in many cases far more important needs on the part of the research worker and I should be quite willing to see a possible substitution

of one or more of these for the language requirement in certain cases."

"The time spent in preparation for passing the language requirements for a Ph.D. could be put to better use in gaining facility in the field of statistics and tests. Most of the worthwhile reported research written in German or French is being translated and much time is saved if I read the translation rather than the original."

"The language requirement is merely a carry-over from medieval days; for most doctors of philosophy it has little if any value or actual use. To my mind it is a waste of time and the requirement should be abolished."

Recognition of specialized needs is the basis of a considerable number of statements of which these are a fair sample:

"I consider two instruments of learning advisable requirements. For students in literature, sociology, philosophy and verbally expansive subjects I think they should require two languages, usually German and French. For students going into clinical psychology or research in psychology or education I think knowledge of statistics infinitely more useful than any language. Any program should allow for individual variations."

"If language can be used as a tool, require it. But if statistics, etc., will aid more in the particular investigation, use them."

"Instead of specific language requirements each department should be free to demand such tools as are necessary—including languages."

"The Ph.D. language requirement is desirable in certain cases but it is not advisable for all students. The requirement was established when conditions were much different than at present, and there is no reason for any emotional clinging to such traditional remnants where they are not useful. All requirements for the Ph.D. degree should be flexible enough to permit whatever adjustments to individual cases seems desirable. Attention preferably should be on ends rather than means."

Frank recognition of the unsatisfactory outcome of the present requirements is voiced in these excerpts:

"I doubt value of the present scheme of examination in French and German for our Ph.D. candidates. It is a *mere ritual!* None of my students, except those who are German or French or have studied abroad, can read any materials for seminars, etc., in French or German. Why keep up the ancient ceremonialism?"

"I believe that the present Ph.D. language requirement is ridiculous since from my acquaintance with various Ph.D.'s it would

seem that the languages are not used. I doubt the wisdom of eliminating the requirement, but think rather that the candidate should be required to read a given number of books in the foreign language and report on them."

"If the job is poorly done and is never used before or after the examination, it serves little purpose. I believe this type of questionnaire should be extended to university professors responsible for requirements for degrees to find just how many foreign works they require of the candidates."

"I consider my small achievement and great interest in foreign languages a very valuable element in my life and profession, but it is such in spite of its having been a requirement. "Requiring" subjects is stupid and *obviously* ineffective in 9 of 10 cases, and is generally considered a species of blackmail by both students and teachers of my acquaintance."

"In educational psychology a graduate student depending upon the nature of his problem—must occasionally translate researches from the German, French or Italian. Our work in graduate departments has been too provincial. Students know only the American researches. If we were to use German, French and possibly Italian research reports in our graduate courses, the language requirements for the Ph.D. would not seem so absurd. As it is now, the candidate is never definitely required to use a foreign language until he wants to make his final matriculation for the degree. Then he must pass a senseless examination in French and German only to forget all about these languages immediately thereafter. This is not a problem of Ph.D. examinations or requirements; it is a question of determining the standard of graduate work."

Summed up in a brief statement the position of the educational psychologists would probably be somewhat as follows: Recognize the tool value of the foreign languages for advanced scholarship in certain fields. Require them where needed and make the requirement bona fide. Where languages have no immediate functional value omit them in the interests of other technical requirements. The cultural value of the languages for general education does not enter into the question.

CHAPTER VII

English

Of the 108 doctors reporting from this field 85 were men and 22 were women. The average age at which the Ph.D. degree was received was 33 years, the present age being 40 years and the present age running from 28 to 60 years. The 108 degrees were conferred by 15 different universities.

Teaching is the present occupation of 101 and research of 6 of this group, 1 person not reporting. Of the teachers 57 are in universities, 42 in colleges and normal schools, 2 in public schools.

English is the mother tongue of 106; 1 is bilingual; 1 made no report on this point. Of this group 105 were examined in both German and French, 52 in Latin, 4 in Greek, 4 in Italian, 12 in various other languages.

Thirty-six report that they were required to take their language examinations 1 year before receiving the degree. Thirty-three report examinations taken prior to the preliminary examinations, while 20 satisfied the language examinations before the final examination on the thesis.

Examinations were taken in statistics by 7 persons, in tests by 8, in surveys by 7 and in various other techniques by 10. In the last group were mentioned such items as journalism, bibliographies, aesthetics, and phonetics.

Foreign travel or study was mentioned by 15 of the 108.

USE MADE OF FOREIGN LANGUAGES

It is to be understood that the amounts reported in Table XVI are rough estimates only. They can contribute general impressions but not statistical exactness to our study. A considerable proportion of the respondents found it impossible to estimate accurately in terms of books or pages read the amount of use they had made of the foreign languages in graduate study or in the past two years. Such descriptive comments as the following were frequently employed: "Constant reading in German, French, and Latin"; "How can a scholar answer this question in this silly form?" "I find French, German and Latin indispensable"; "I can read about 20 languages"; "I read them all the time"; "I used neither lan-

guage"; "I have used these languages regularly since completing work for my degree"; "I use foreign languages but very little"; "I have not read more than 2 books in Latin recently but find constant need for it in research work"; "More than at the moment I can recollect"; "Negligible use"; "Practically none"; "None"; "Oh God! how can one answer such a question?"

TABLE XVI

USE MADE OF FOREIGN LANGUAGES

	DURING GRADUATE STUDY				DURING LAST TWO YEARS			
	No. Persons	Books Read	No. Persons	Pages Read	No. Persons	Books Read	No. Persons	Pages Read
German...	40	1–25	24	5–1000	15	1–5	22	5–600
	4	30–150	5	1500+	5	6–20	2	1800–2000
French....	37	1–25	21	6–2000	29	1–25	22	25–3000
	10	28–100	5	2000+	3	30–75	3	3600–5000
Latin.....	17	1–25	19	5–500	12	1–5	14	5–500
	6	30–200	2	500+	...	.....	2	600–5000
Spanish...	1	15	...	.....	...	.....	1	50
Italian....	6	1–60	5	15–5000	1	1	2	25–2500
Others....	7	1–15	2	25	...	.....	3	10–600
	2	11	2	50–200				

Specialists in English quite evidently make considerable use of foreign languages, centering chiefly on German, French and Latin in the order named. In this as in other fields, however, there is noticeable a sharp dropping off in the amount of foreign language reading done after leaving the graduate school.

Table XVII shows the amount of formal language study had by the English group. The table should be read: 52 percent of the 108 doctors had 2.1 years of study of German in the secondary school, 75 percent had 2.2 years in the college or university; and so on.

TABLE XVII

AVERAGE NUMBER YEARS FORMAL LANGUAGE STUDY

	German	French	Latin	Greek	Spanish	Italian	Other
Secondary School—	(52%)2.1	(26%)2.6	(80%)3.5	(16%)2.9	(2%)2.	(1%)1.	.....
College or University—	(75%)2.2	(86%)2.3	(68%)2.3	(30%)2.73	(5%)1.4	(9%)1.5	(19%)1.6

In Table XVIII is given the respondents' own estimate of their language skill during graduate study and in the period elapsing since. The table should be read: 19 percent of the 108 respondents claim an excellent mastery, 51 percent a fair mastery, and 30 percent a poor mastery of German during graduate study; and so on for the other items.

It will be seen from this table that German suffers as compared with French or Latin, both in the estimated degree of reading skill

TABLE XVIII

ESTIMATED LANGUAGE SKILL AND ITS PERSISTENCE

	SKILL DURING GRADUATE STUDY			SKILL AFTER GRADUATE STUDY		
	Excellent	Fair	Poor	Increased	Same	Decreased
German	19%	51%	30%	18%	32%	50%
French	40%	54%	6%	36%	41%	23%
Latin	23%	50%	27%	16%	49%	35%
Spanish	25%	50%	25%	60%	....	40%
Italian	8%	78%	14%	30%	30%	40%

during graduate study and also in the retention of later skill. It would be interesting to know whether the grade of "fair" shown by half or more in this and other similar tables represents an actual condition or only a human tendency to avoid extremes in judging one's own abilities.

COMMENTS

Doctors from the field of English are, on the whole, advocates of the foreign language requirement for the Ph.D. degree. Fifty-four percent of those commenting urged the retention of German and French; about 40 percent of these advised Latin in addition. Not all, however, were in favor of Latin, several contending against its value, at least as a requirement.

Only half a dozen advocated the foreign languages on strictly cultural grounds. Another half-dozen advised that, while foreign languages are necessary in the advanced study of English, no uniform requirement is defensible, the needs of the field studied being the criterion. Sixteen percent would keep the requirements as they are or make them stiffer.

Italian, Greek, Spanish, Russian, Anglo-Saxon, and the Scandinavian tongues were mentioned as necessary to the student of English under certain conditions. About 10 percent advised against any foreign language requirements of formal nature, several looking upon the time spent on them as wasted.

Here and there among the respondents was a writer who resented either with sarcasm or flippancy such an inquiry as the present one, looking upon it as an effort on the part of educationists to lower the standard of the Ph.D. degree. On the other hand, at least an equal number expressed interest in the study and asked to be informed of its results.

Typical statements advocating the foreign language requirements for doctors of philosophy follow:

"A thoroughly and completely orthodox Ph.D. in English calls for the following: French, Old French, German, Middle High German, Gothic, Old English, Middle English, Old Irish, Latin."

"The candidate for the Ph.D. in English should be held to thorough mastery of Old and Middle English."

"As Americans we are isolated enough without further decrying language acquirement which tends to increase understanding of other peoples."

"A real mastery of *one* foreign language (French, German, Spanish, Italian, Russian) should be required."

"No one can consider himself well educated (even *Magister Artium,* to say nothing of a *Doctor Philosophiae*) who does not know these two important languages. I think you are making a mistake to suggest the possibility of substitution. The Association of American Universities will never countenance it."

"Stiffer language requirements would eliminate many 'lame-ducks' among professors and teachers in general and stimulate more sober attitudes toward the profession. Of course, German and French will be of greater value to most teachers than Latin. But all three should be required."

"It may be that advanced students of certain fields do not need languages. Why, in heaven's name, not give them a degree which signifies excellence in their particular fields? The answer is that the Ph.D. like the B.A. has been a sign of certain cultural attainments and therefore has had a certain value in the eyes of the public, quasi-illiterate though it be."

"I can readily see wherein certain types of minds can profit by advanced work without the philological requirement, but I think the removal of the requirement would tend to weaken the discipline necessary to insure high attainments. Many men would tend to follow the line of least resistance by avoiding the languages when they need its discipline. It might tend, also, to lower the value of the degree itself. Unless the degree involves a great deal of work outside the merely pleasant path of one's inclination, it will be acquired too easily."

"My advice is no good because I know only too well that it cannot be followed under our present educational system. It is this: to have high-school principals who are cultured enough and sufficiently unbiased by Schools of Education to see that some of the intelligent students are going to be interested in academic pursuits later on and will consequently need all the literary and linguistic background they can acquire. Good Ph.D.'s aren't made in the graduate school only. I am spending this year loitering about in Europe and I am appalled by the stupidity or lack of equipment in modern languages of the average American compared with the average European. Almost the only Americans who use the languages with genuine fluency are the daughters of wealthy families

who, for social reasons, are educated abroad. But then what are *requirements* anyway? I really can't see how anyone can be much good as a research scholar who doesn't himself feel the limitations set by his own ignorance."

Whatever one may think of the cultural quality of the thought reflected in such excerpts as the following, they nevertheless represent a somewhat prevalent attitude of mind which must be taken into account in discussing the language problem:

"I am in full sympathy with the desire of men at work in 'pure science,' practical 'law,' 'education,' and kindred fields where 'success' is possible without a sound knowledge of the history of thought to avoid 'language requirements.' They should be encouraged in absolute neglect of the languages. Thus there would be no possibility of illusion about their intellectual aims and attainments on the part of the educated public."

"First let us assume that a reading knowledge of French and German is useful for all cultivated people, whether or not they want advanced degrees. Any one who debates that proposition is quite evidently an uncultivated person.—Then why should there be any investigation to determine whether candidates for advanced degrees, who are presumed to be people of exceptional culture and ability, should be expected to have such equipment? This kind of questionnaire could only come from a School of Education. No reputable graduate school would be interested in it. I could tell some rich and racy stories of education students who think that the requirements of graduate schools are unreasonable, but I shall reserve them for conversational purposes."

"I do not see how a doctor of philosophy can accept his degree with a clear conscience unless he is able to read the learned languages: Latin, French, and German. I should say they were essential to graduate work—in no matter what field. I suppose in some of the 'fly-by-night' subjects a knowledge of foreign languages is unnecessary—as all real knowledge is unnecessary—but of these there is no need to speak at present."

"I have met in my day many men who caviled at the requirements but I have not known many of those men make any success worth talking about."

"Collect for Ph.D.'s:

"Almighty and most merciful Father, who in Thy wisdom hast seen fit to keep thy knowledge concealed from the ken of earnest inquirers, grant, we beseech thee, cessation of inquisition to those who have nobly foresworn their comfort in attaining the doctorate: and grant also that we, in emulation of thee, may successfully conceal our knowledge if not our wisdom, from those who so ruthlessly

assail us by 'research,' which so pitilessly has crucified afresh Thy Son our Lord, Jesus Christ. Amen."

If these defenders of the faith feel such scorn for cultural outcasts from other fields what must they think of their own brethren who express sentiments such as these:

"My research work has been in the field of American literature. In that field I have contributed to the *North American Review*, the *Bookman*, the *Cambridge History of American Literature*, and other publications. I have never felt the need of any foreign language, except Latin at times. I spent a year at the University of Berlin trying, among other things, to get a fair mastery of German. Aside from the fact that they were necessary in acquiring my Ph.D. degree, I look upon the time spent in the study of French and German as so much energy thrown away."

"In my opinion, foreign language requirements should not be made of candidates for the Ph.D. degree in English. If a candidate needs to know a foreign language in order to conduct his research, he will learn that language."

"I cannot see the utility or the necessity of requiring a formal doctor's examination in specific foreign languages which the student, in view of the special character of his work, may find no use for. I should make language requirements for the Ph.D. degree entirely a matter of individual cases and not a matter of broad, general rule."

"The language requirement defeats its own purpose and goes far to defeat the main purpose. At least one language other than one's own should be required and a real mastery of it required before the candidate begins the work toward the doctorate. But the rigid and conventional requirement of two specific languages, German and French, for all alike is ridiculous."

"This should depend entirely, I think, on the subject one is going in for. In American Literature, for instance (while languages are of course useful) I think they are stressed at the expense of History, Economics, Philosophy, and a broad knowledge of foreign literatures gained—if necessary—from translations. I think too that it is a puzzle to know how one can have valid opinions in the contemporary world who does not know something about the development of the physical sciences."

"Looking at the situation candidly I find a dilemma. Ideally, a doctor of philosophy should know several languages and know them well. But, I'd not make the language requirement so stringent as to deny to an ambitious student the excellent training and chance for creative scholarship which studying for the doctorate offers. After all—competent translators can be found."

"Let the graduate student choose his field of interest; let the field determine the tools he will need and if he finds himself lacking in the necessary tools, let him go and get them or change his field. Presumably the graduate student is a reasonably mature person and if he elects to work in a certain field should know what tools are needed (or be told) and should make up his mind accordingly."

"The reading in languages by which I actually profited was very slight. French and Latin were useless in connection with my research problem except for scraps which I could easily have had translated for me."

Typical of many other comments were the following:

"I am firmly convinced that earlier and more extensive preparation in foreign languages should be made a stringent requirement for the doctor's degree, and should in some measure be included in the master's. I hope it will not be regarded as asinine conceit because my work has led me into the field of languages, when I say that I have on several occasions been embarrassed by lack of knowledge on the part of colleagues, my superiors in rank, of what was being done in foreign fields of scholarship."

"If you ever make an investigation of what Ph.D.'s think of Ph.D-ing, please, oh, please, don't leave me out. It seemed to me then and now as probably the most frivolous and expensive form of barrier-jumping ever invented by kind-hearted and otherwise intelligent men."

"Studies of questions of this sort are a waste of labor and postage and the results are frequently misleading if not actually harmful."

"While the requirements in French and German are essential, I am convinced that I received more value from the classics as far as an understanding of the English language is concerned."

"A regrettable tendency now existing, and one that will do harm in years to come, is the decay of foreign language requirements in the high schools. I feel that this will make the task of our graduate schools increasingly difficult."

"The present system might be abolished and the candidate for the doctorate required to read the material pertinent to his special field of work, in whatever languages it might be found, and to pass, as a part of his final examinations, on such material. This system would have the advantage of causing the candidate to familiarize himself with the languages most useful in his special field rather than in a field which might be of no service."

"This rather rigid requirement should be kept as a barrier to mere plodders who would wade through most other requirements to

get the degree. I, personally, have known mediocre persons who have been kept from this degree by these requiremnts. Every great thinker with whom I have come in contact knows several languages. I believe therefore that this valuable preparation for scholarship should be kept before all candidates for the Ph.D. degree."

"I can see how the language requirement might be left off in some of the newer fields, such as Psychology, etc. As for Education degrees, I think theories and statistics and IQ's and measurements, together with a knowledge of how many brick school houses in Utah have steam heat and how many have hot air, is sufficient punishment for this group."

It will be seen from these quotations that the English doctors agree on foreign language requirements scarcely better than do scholars from other fields. The chief difference seems to be that some of them express themselves with more abandon.

CHAPTER VIII

Foreign Languages

One hundred-two language Ph.D.'s of whom 85 were men and 17 were women returned questionnaires in this inquiry. Besides this number perhaps a dozen wrote explaining that in view of the fact that foreign languages were their major it would be unfair for them to take part in such a study. Eighteen universities were represented in the degrees received by this group. The average age at which the Ph.D. degree was conferred was 34 years, the present average age being 41 years and the present age range from 27 to 57 years.

Of the 102 reporting 93 are engaged in teaching, 6 in research, 3 making no report on this point. Forty-six of the teachers are in universities, 40 in colleges or normal schools, and 7 in public schools.

It is interesting to note that of the 102 majoring in foreign languages 14 are of foreign speech, 4 are bilingual, and 84 claim English as their mother tongue. Three of this group were examined in but 1 language, 44 were examined in 2 languages, 52 were examined in 3 languages, and 3 make no report. The required languages were as follows: German 95, French 94, Latin 47, Spanish 12, Italian 9, others unspecified 37, no report 1.

In 39 cases the language requirements were reported satisfied 1 year before the degree was taken, in 22 cases before the preliminary examination, and in 8 cases prior to final examination on the thesis.

Eleven persons report having taken examinations in statistics, 7 in tests, 10 in surveys, 2 in formulae, 19 in various other technical lines including phonetics, paleography, research, business practice, bibliographies.

Travel or study abroad was mentioned by 12 persons.

USE MADE OF FOREIGN LANGUAGES

The estimates given in Table XIX show, as might be expected, that the foreign language group read the languages more than scholars in any of the other fields. This is their business and some of them, at least, seem to do it well. Yet a considerable number

frankly admitted doing but little foreign language reading outside their routine duties as teachers. Such comments as these frequently appear with reference to the use made of the foreign languages during graduate study or within the recent period: "Very little use, as small colleges do not have the books"; "Constant reading of German, occasional reading of Latin"; "Constant reference to German and French articles"; "Daily use"; "Am using very little except French"; "Practically none"; "None for research but much for pleasure"; "Little except in dictionaries and catalogues"; "Little outside of what I teach."

TABLE XIX

USE MADE OF FOREIGN LANGUAGES

	During Graduate Study				During Last Two Years			
	No. Persons	Books Read	No. Persons	Pages Read	No. Persons	Books Read	No. Persons	Pages Read
German...	26	1–5	17	10–2000	28	1–25	9	2–400
	8	75–2000	7	3000–50,000	3	30–90	3	1000–20,000
French...	21	1–50	18	30–2000	22	1–25	11	10–500
	10	75–2000	7	3500–100,000	7	30–1000	2	5000–6000
Latin.....	15	1–30	8	30–3000	8	1–12	6	100–500
	3	50–1000	5	5000–12,000	...	.....	2	1000–2000
Spanish...	7	2–1000	4	600–40,000	8	1–305	1	300
Italian....	6	1–100	3	150–1000	5	1–93	1	1000
Others....	7	4–700	9	400–10,000	2	1–2	6	100–2900

A comparison of Table XX with corresponding tables for other fields shows that the foreign language group have a more extensive training, especially in Latin and Greek, not only in college, but also in high school. This table should be read: 50 percent of the foreign language majors studied German 2.9 years in secondary school, and 69 percent studied German 2.99 years in colleges or universities; and so for other items.

TABLE XX

AVERAGE NUMBER YEARS FORMAL LANGUAGE STUDY

	German	French	Latin	Greek	Spanish	Italian	Other
Secondary School—	(50%)2.9	(34%)2.7	(65%)3.7	(19%)2.9	(3%)1.6	.....	(1%)4.
College or University—	(69%)2.99	(59%)3.2	(58%)3.85	(25%)3.7	(11%)3.	(11%)2.1	(5%)8.

Table XXI which follows gives the respondents' own estimate of their language skill during graduate study and in the period since. This table should be read: 51 percent of the 102 respondents claim an excellent mastery, 40 percent a fair mastery, and 9 percent a poor mastery of German during graduate study; and so on for the other items.

Much higher estimates of language skills are shown by this table for language doctors than for those from other fields, less

TABLE XXI

ESTIMATED LANGUAGE SKILL AND ITS PERSISTENCE

	SKILL DURING GRADUATE STUDY			SKILL AFTER GRADUATE STUDY		
	Excellent	Fair	Poor	Increased	Same	Decreased
German	51%	40%	9%	49%	31%	20%
French	58%	36%	6%	59%	32%	9%
Latin	55%	37%	8%	40%	38%	22%
Spanish	64%	36%	....	80%	10%	10%
Italian	66%	27%	7%	77%	23%	....

than 10 percent being "poor" for any language. One wonders also whether the language specialists' interpretation of "excellent," "fair" and "poor" may not be more severe than that of scholars in other lines. Yet one must remember that most of the examining of Ph.D. candidates in the required languages is done by this group, who certify a "ready reading knowledge" to many who, by their own confession, do not have it.

COMMENTS

Foreign language doctors believe in the languages, at least for themselves. Out of 86 informally expressing their views, nearly two out of three took pains to insist on the value of French and German as tools in the study of language and literature. Perhaps it is because the various languages are so much a part of their culture, that the cultural value of foreign language was emphasized by but a few. A dozen respondents urged that the language requirement be made more effective, both by the rigor of the examinations and by securing language mastery earlier in the course. Another dozen want the Ph.D. degree protected either by a more effective language requirement or by the use of another advanced degree for no-language doctors.

Even into the languages themselves, however, the spirit of unrest has entered. For, after several had blamed the schools of education for all the trouble, fully ten respondents advised determining the language requirements in accordance with the particular needs of the students concerned. Doubt was even expressed whether the languages are a good investment of time for many scholars outside the language specialties. Several respondents expressed the view that language specialists were disqualified to speak of language needs outside their own field.

Typical comments representative of those who advocated languages as a part of the Ph.D. requirement were such as these:

"The Ph.D. degree should not be given for research work in a subject in which research work can be done without a knowledge of French and German."

"There should be two types of advanced degrees, equivalent to present doctorate: one primarily for teachers, the other for research men."

"I have been called on in *many* cases to help workers in other fields (science, math., philosophy, history, economics, psychology, ethics, art, business) with foreign books, articles, statistical tables, etc., which they should have been able to read for themselves."

"A comfortable reading knowledge of French and German should be a requirement (as it is at Harvard) for the A.B. degree. In graduate work such a knowledge—particularly of German, is indispensable. Personally I require it in all my graduate courses."

"I believe that a knowledge of foreign languages is practically necessary for an educated person, and for graduate students in many fields a great advantage, and that this knowledge is most profitably gained early in one's career, as part of one's general 'stock in trade'."

"I belong most emphatically to those who believe that a more thorough training in foreign languages should be made a prerequisite to the conferring of any degree of Doctor of Philosophy,—no matter what field is covered by this much-abused term. Probably fewer 'doctors' would be created then, and the number of shallow, superficial, quite useless American dissertations might be reduced. American 'scholarship' would gradually become less of a byword in the *respublica litteratorum,* and American 'scholars' furnish smaller evidence of blissful ignorance of what has been done so much better and earlier by scholars who happened to write in an idiom other than English. Since receiving it, I have tried to discuss your questionnaire with some colleagues (i. e. in Italy), but I soon stopped doing it. To European students the very fact that such a question can be raised is the strongest confirmation of their low opinion of American ability and willingness to think straight. That any aspirant to higher education,—to the 'things of the spirit'—should imagine himself able to get along without the hard self-discipline and training of the will-power implied by the study of languages, is to them proof-positive of all they have ever heard or read—chiefly through thoughtful Americans!—of the amusing self-sufficiency and national conceit of 'les Americains'."

"I think that one of the worst services that professional educationalists are rendering the country, in addition to the useless complication of tests, formulae, etc., is the lack of comprehension displayed by most of them in the humanistic and scientific value of the study of other languages (and literatures) than our own."

"As long as the stream of culture flows *from Europe to America,* so long should educated Americans possess the keys to that culture. Translations are a makeshift."

"I am heartily in favor of the two-language requirement. Its retention insures knowledge of two subjects at least, and shuts out the possibility of their being replaced by less desirable fads and fancies."

"Ph.D.'s from American schools are already held in none too great esteem abroad."

"French and German should be required, as a matter of general culture, for all candidates for the Ph.D. degree, no matter what the subject, or the extent to which they are afterwards used."

Among the language specialists, however, not all are of the same mind about the value of the present requirement, as these remarks show:

"It is my belief that French can be dispensed with in *most* lines of higher study."

"I should recommend a more flexible language requirement. In the case of language students, it should be two languages other than the major subject."

"My firm conviction that the current arbitrary German-French requirement is outgrown:

(1) because 50 percent of candidates meet the requirement very perfunctorily—a gesture;

(2) because only the candidates' major department can judge which foreign language, if any, will benefit its students. It is absurd to make the same requirements of students in Economics as in literature—for example.

"No doubt in certain fields of research the foreign language requirement is *relatively* superfluous. A study, therefore, should be made of the fields of science which require a knowledge of languages, to ascertain the reasons for the *use* of the languages, and hence their *relative* importance. A *relative* foreign language requirement might in that way, be formulated which would be more satisfactory, and possibly in certain fields the requirement could be done away with entirely without any undue results in research."

"My own experience in conducting classes for candidates who are preparing for their reading examination in German makes me question the value thereof for candidates *majoring in education:*

(1) They evince little scholarly interest.
(2) They rebel against languages.
(3) Some declare they will never again open a book in the foreign language, once their oral is past.

"For all others the requirements should in no wise be lowered."

"In any field other than language, I can't see the use of too stringent a requirement in German or French. The so-called reading knowledge disappears generally in a short time."

Though in most universities the language departments give the required examinations there seems to be much dissatisfaction with the outcome:

"I know of a case where the German department reported, 'Mr. X reads German with difficulty and understands it imperfectly' and yet the candidate was recommended by his major department."

"From the candidates I have had occasion to prepare for Ph.D. examinations in French for three universities of standing I am convinced that most of these so-called examinations are a formality only. If the student needs the language he must then of his own volition acquire a practical working knowledge of the language thus needed."

"I wish the question might be canvassed as to the examining body—whether it should be the department of the candidate's specialization or the language department concerned. We find our administration of the French examination a considerable drain on budget and time during last quarter. There were 145 candidates for examination, and 150 hours were spent by examiners on preparing, administering and grading."

"I surely will never approve of the attitude of some deans requiring quite an extensive knowledge of these languages, and refusing degrees because of the lack of such extensive knowledge."

Various other points of view are presented in the quotations which follow:

"The conventional emphasis on *French* seems to me exaggerated. If one is to have any understanding at all of the history of English literature (or of German, or Spanish, for example) a knowledge of Italian literary history is at least as important as a knowledge of the French, and a knowledge of Greek literature more, and of Latin literature *far* more so."

"Such requirement should be in force at the beginning of the period of candidacy and graduate investigation. In some cases it has been deferred to the last and satisfied even after all other requirements have been met. In such a case it is clearly a bit of meaningless red tape."

"Even if one does not need a foreign language for research or study, it is a great satisfaction to oneself to be able to read and understand readily the tongue of another."

"I do not think that these two languages should necessarily be required for the degree in every subject. Spanish will certainly

be more important in some lines and there are, of course, many subjects in which there is not a great deal of value literally in German or French."

"You should get the data only from doctors who are not specializing in language. For me to answer the questionnaire would be like an admiral passing on the cruiser bill."

"A general softening all along the line is noticeable in American education. It would be unfortunate if this were to make further inroads into the graduate school."

"A mastery of foreign languages is essential to real scholarship in any field. I am not aware of any dissension (!) from this rather universally held opinion, *outside* of the ranks of the colleges of education."

The gentleman last quoted is quite evidently not in touch with the movement of thought in many graduate schools. Quotations scattered throughout this report clearly show dissent from workers in various fields. Probably no doctors from the languages doubt the cultural or the utility value of foreign language. Many of them are, nevertheless, greatly dissatisfied with the present anomolous situation in which we save our faces on paper but lose the reality at which we aim.

CHAPTER IX

Geography

Twenty-three respondents, 20 men and 3 women, coming from 6 different universities, represent the geography group in this inquiry. The present average age of this group is 42 years with a range running from 26 to 60 years. The average age at which the degree was received was 38 years, this being the most advanced age for any one of the 17 fields represented in this study.

Teaching is the present occupation of 20 out of the 23, the others being housewives, which indicates that all the women geographers of the group married. Of the 20 teachers 16 are in universities, 3 in colleges and normal schools, and 1 in a public school.

English is the mother tongue of 19, 3 represent various foreign tongues, and 1 is bilingual. Twenty-one persons were examined in 2 languages and 2 in 3 languages. The languages accepted for meeting the requirements were German in 21 cases, French in 20 cases, Spanish in 4 cases, and Scandinavian in 3 cases.

Ten persons met the language requirements 1 year before the degree was conferred; 5 before preliminary examinations were taken; 5 before examination upon the thesis; and the remainder at various other periods.

Fifteen persons report having taken examinations on statistics, 11 on tests, 1 on surveys, 2 on formulae, and 7 on various other technical requirements such as map reading, field work, and photography.

Three persons reported having traveled or studied abroad.

USE MADE OF FOREIGN LANGUAGES

The data summarized in Table XXII give the estimated amount of reading done in foreign language materials during graduate study and during the last two years. Several of the respondents found it impossible to indicate the number of books or pages read substituting various descriptive remarks as follows: "Use the languages in editing a scientific journal;" "Read books and articles in Spanish, Portuguese, French, and German;" "No use made of languages, for teaching has excluded research;" "Read

some books and articles in French and German each year;'' ''None except to refer to German and French maps and atlases.''

TABLE XXII

USE MADE OF FOREIGN LANGUAGES

	DURING GRADUATE STUDY				DURING LAST TWO YEARS			
	No. Persons	Books Read	No. Persons	Pages Read	No. Persons	Books Read	No. Persons	Pages Read
German	3	3–5	2	400–500	3	2–11	4	5–400
	2	9–20					1	750
French	2	2–6	2	100–500	2	3–13	4	5–300
	3	10–12	1	5000+			1	750
Latin	1	2	...	.....	...	.....	...	.....
Spanish	1	5	...	.....	...	.....	1	725
Italian	...	.....	...	.....	1	6	...	.....
Others	1	28	...	.....	...	.....	2	250–1250

Geography evidently makes but little use of foreign language either in graduate study or subsequent work. Perhaps this explains why those geographers who in their comments defended the language requirement based their argument chiefly on the general educational value of language, not stressing its tool value strongly.

Table XXIII shows the amount of formal languages study had by members of this group. The table should be read: 48 percent of those reporting had 2.54 years of German in secondary school, 61 percent had 2.1 years of German in college or university; and so on.

TABLE XXIII

AVERAGE NUMBER YEARS FORMAL LANGUAGE STUDY

	German	French	Latin	Greek	Spanish	Italian	Other
Secondary School—	(48%)2.54	(17%)2.75	(43%)3.2	(4%)2.	.....	.....	.....
College or University—	(61%)2.1	(70%)2.2	(9%)1.5	(4%)1.	(4%)1.	.....	(4%)1.

Table XXIV which follows gives the respondents' own estimate of their language skill during graduate study and in the period elapsing since. The first of these tables should be read: 24 percent of the 23 respondents claim an excellent mastery, 43 percent

TABLE XXIV

ESTIMATED LANGUAGE SKILL AND ITS PERSISTENCE

	SKILL DURING GRADUATE STUDY			SKILL AFTER GRADUATE STUDY		
	Excellent	Fair	Poor	Increased	Same	Decreased
German	24%	43%	33%	33%	34%	33%
French	23%	50%	27%	36%	32%	32%
Latin	....	75%	25%	....	75%	25%
Spanish	....	....	....	33%	17%	50%
Italian	100%	....	....	100%	....	....

a fair mastery, and 33 percent a poor mastery of German during graduate study; and so on for the other items.

Making full allowance for the fact that these degrees of skill are subjective estimates and, therefore, not rigidly comparable with similar tables from other fields, we may say that geographers seem to have approximately an average degree of reading skill in the language.

COMMENTS

The 21 (out of 23 reporting) who express their views on the foreign language requirement for majors in Geography were not well agreed on the question. Half (11) would demand German and French as now, several asking that the test be more thorough. Three believed the value received is not worth its cost, three more would require tools of research as needed by particular fields.

Several spoke for the languages in unusually strong terms, as the quotations from their letters show.

"The institution of an inquiry such as is represented by this folder must be unique in the history of learning, at least in the history of western learning, and is probably unthinkable other than in the United States. I have encountered but one expression of distaste for the formal requirement of a reading knowledge of French and German. This was made by a candidate for the doctorate who received his degree at the same time as did I, and at an informal gathering of prospective doctors sponsored by our excellent graduate dean. The person in question was taking his degree in Education. If the doctorate represents, as it is assumed to represent, a patent of citizenship in this learned republic, a formal examination on the ability to read French and German is certainly an absolute minimum. Certainly in a healthy condition such an examination should be unnecessary: the examination would concern itself with the content of literature in other languages, not with the ability to read it."

"Whatever the reason for this failure (really to require language) on the part of university authorities, I believe it does its part, in a subtle and dangerous way, toward convincing the student that fields of thought other than his own immediate field are of little importance to it or him. Furthermore, it reduces him, in the foreign field, to a diet of abstracts and translations, which reach him often several months after the original was published and which to a certain extent fail to reflect adequately the author's point of view. All this tends in the long run to make of the 'doctor' an intellectual and spiritual dyspeptic. Worse than that (if possible) is the cutting of him off from *sympathetic* contact with foreign leaders of thought. To say that this leads, in some cases,

to a certain complacency which does not realize its own shortcomings, is not, I think, carrying the argument too far. From some matured scientists we have heard that research of a sort is being overdone; that the pace leaves no time for meditation; that the breadth of view of many of our recent 'doctors' leaves much to be desired; that often they seem to be not genuinely educated; even that they find difficulty in taking part in intelligent conversation if it gets off their beaten track. To whatever extent these things are true, I believe the fault lies partly, perhaps very largely, at the door of language ignorance, especially touching German and French. We have as yet reaped only the first fruits of language ignorance: our new generation of 'doctors.' But the second generation is in the making. Insofar as it is being influenced by the tendency, past and present, to slight the language preparation, this oncoming group is being deprived, without knowing it, of many a source of inspiration without which some, at least, of its members must remain intellectually crippled—unable to pass on inspiration which they never have received."

"There should be no substitutes for these two modern languages, except perhaps in Mathematics when Italian *might* be substituted. In those fields of research requiring Spanish, Scandinavian, or other languages, these should be *added* to the requirements. For the sake of a higher standard of scholarship and culture among our Ph.D.'s the language requirements should be made strict everywhere. Americans, as a whole, need more—not less—language training."

"Our graduate students are appreciating the desirability of learning to read German and French if they are to know the field of Geography,—and Spanish if Mexico and South America are their special fields of research. A group of them this year, short in German, have secured the services of a skillful instructor and are reading Geography in German."

Other points of view are represented in such comments as these:

"I have always felt that I spent more time in preparing for the language examinations than the languages were worth to me. I would suggest that a candidate be given a choice of either taking the language examinations or of taking additional work in a given field."

"If the fluent reading of two foreign languages *is* essential, *these ought to be demanded* at the beginning of the second year of graduate work,—not so a university can grant a Ph.D. degree. If needed in the particular research problem,—or if a knowledge of the literature of a subject in French and German is to be a part of the Ph.D. examination,—o. k.,—but of whom and where is such needed? Give the time needed for studying languages by graduate

students to research, or else never let them enter graduate work without the languages.''

''My recommendation would be that more English be required.''

''There is plenty for me to read in the field of my science in both French and German but I cannot read them easily enough to do it in the time at my command.''

''The need of reading in foreign language is so small that it is insufficient to keep one in practice in my own work.''

''It is pathetic that no assignments can be given our advanced majors in other languages than in our own.''

''I am not sure that a specific language examination is the best way to enforce an easy reading knowledge: in the case of our own graduate students we require familiarity with foreign literature in our field rather than the ability to pass a language examination as such.''

''The *language* requirements are very often only *examination* requirements.''

''Either a more thorough knowledge of the modern languages should be required, or the language requirement should be dropped.''

''The examination now given less than one year before the granting of the degree is out of joint. The supposition is that the languages are to be used in research; hence the examination, if at all, should be given at least two years in advance. Whether to require one or two depends on the field of study. Perhaps none should be demanded. Personally I favor languages for all those who would be scholars in their fields, but I am not certain that the present blanket requirements are at all desirable. Again, at present most of the examinations are but an hypocrisy. Few candidates really pass the examinations and few still have any real knowledge of the languages for which they are examined.''

Evidently we might say that in theory at least these geographers are advocates of the languages as a part of the Ph.D. equipment. But they, like many others, are not satisfied with the outcome of the present requirements.

CHAPTER X

Geology

Geology supplied 95 returns to the questionnaire, only 1 of these being from a woman. The ages of this group at present run from 26 to 61 years with an average of 39 years. Degrees were received at the average age of 32. Sixteen universities are represented.

The 95 persons making returns are divided between two occupations, 53 persons being engaged in teaching and 42 in research. Of the 53 teachers 39 are in universities, and 14 in colleges or normal schools, with 1 of the latter group teaching also in a public school.

Ninety-one of the group have English for their mother tongue, 1 is bilingual, 3 are of foreign speech. Ninety of these persons were examined in 2 languages; 3 in 3 languages; and 2 make no report. German and French were the languages for 92 persons. One was examined in German but not in French. One was examined in Latin; 3 in Spanish; and 2 make no report.

As to when the language examinations were taken, 18 specify no time; 37 report the examination 1 year before the degree; 34 say the examinations were taken before the preliminary examination; 18 say before examination on the thesis; and 5 report varying periods, approximating 6 months before the final examinations.

Thirty report having taken examinations in statistics, 33 in tests, 26 in surveys, 18 in formulae, and 24 in various other technical instruments. The caution must be observed here, as in most other fields, not to interpret statistics, tests or surveys as having the same meaning for the geologist that they have for the student of education.

It is of interest to note that 10 out of the 95 geologists report having traveled or studied abroad; others may have done so without mentioning the fact.

USE MADE OF FOREIGN LANGUAGES

In Table XXV given below are estimates of the amount of reading done in foreign languages during graduate study and during the last two years. The following are typical of remarks

made by those who did not find it possible to state in terms of number of pages or books the amount read: "Probably half of the reference works used were German and about 15 percent French;" "Practically all my research reading was done in German and French;" "None;" "Short references only;" "Work in field geology, hence very little French and German used;" "Virtually none;" "I find everything I need translated;" "Speaking knowledge of Spanish very important;" "Nearly all research in my special line is printed in English;" "Did not pass French until after my research was completed and thesis written;" "I keep in touch with all European literature."

TABLE XXV

USE MADE OF FOREIGN LANGUAGES

	During Graduate Study				During Last Two Years			
	No. Persons	Books Read	No. Persons	Pages Read	No. Persons	Books Read	No. Persons	Pages Read
German...	18	1–10	41	50–1000	11	½–5	41	10–500
	3	15–25	7	2000–4000	3	6–10	6	600–4000
French...	18	1–15	41	50–1000	5	1–3	37	5–300
	2	18–24	3	1500–2500	3	8–10	3	500–1000
Latin.....	1	2	1	10	1	3	1	3
Spanish...	3	1–3	3	300–600	2	2–3	3	4–50
Italian....	...	.....	2	50–200	...	.....	...	.....
Others....	...	.....	3	150–1000	...	.....	3	25–60

The foregoing estimates show that about one person out of five reports from 1 to 10 books read in German and 1 to 15 books read in French during graduate study; and that nearly half report from 50 to 1,000 pages read in each of these languages during graduate study. The drop is noticeable in both languages during the last two years.

The amount of time spent in the study of languages by this group is shown by type of school in Table XXVI. The table should be read: 53 percent of the group studied German 2.1 years in secondary school, and 73 percent studied German 1.77 years in higher institutions; and so on for other items.

TABLE XXVI

AVERAGE NUMBER YEARS FORMAL LANGUAGE STUDY

	German	French	Latin	Greek	Spanish	Other
Secondary School—	(53%)2.1	(23%)2.75	(46%)3.27	(4%)2.25	(4%)1.5	.....
College or University—	(73%)1.77	(64%)1.4	(20%)2.2	(4%)2.5	(12%)1.5	(2%)1.5

Table XXVII gives the respondents' own estimate of their language skill during graduate study and in the period elapsing since.

Read the table: 14 percent of the 95 respondents claim an excellent mastery, 64 percent a fair mastery, and 22 percent a poor mastery of German during graduate study; and so on for the other items.

TABLE XXVII

ESTIMATED LANGUAGE SKILL AND ITS PERSISTENCE

	Skill During Graduate Study			Skill After Graduate Study		
	Excellent	Fair	Poor	Increased	Same	Decreased
German	14%	64%	22%	32%	33%	35%
French	19%	54%	27%	29%	32%	39%
Latin	....	77%	23%	6%	25%	69%
Spanish	58%	14%	28%	50%	31%	19%
Italian	....	....	100%	....	....	....

In the graduate study part of this table the respondents are seen to credit themselves with "fair" mastery of the two languages most used. In the last three columns a striking feature is the almost even distribution among "increased," "same" and "decreased" for skill in German and French.

COMMENTS

Of the 95 doctors of philosophy with geology major making returns, 83 added comments to their formal reports. Of the 83 commenting 39 specified German and French as essential or highly desirable to work in this field of science.

Other languages mentioned as desirable are Spanish, Italian, Swedish, Greek, Russian, Latin, Scandinavian, Danish in the order given, Spanish receiving the highest vote (9). Several writers claim that Spanish is more necessary than either German or French to the geologist.

Seven persons express the opinion that the present requirements are reasonably satisfactory and another seven ask that the language examinations be made more stringent. Eight respondents are convinced that French and German are not worth to the geologist the time required in mastering them. Five of the geologist group would require the languages for their cultural or disciplinary value. Ten of those commenting urge that the languages required should be selected, presumably by the department itself, with reference to the practical needs of individual students rather than having one blanket requirement apply to everybody. Nine respondents insist on the value of German but would not require French.

In this field as in a number of others it is noticeable that a considerable proportion of those who most strongly insist upon the

necessity of language as a tool in their field report that they are doing almost no reading themselves at present and did but little as graduate students. Whether they recognize the value of language through their own handicap or whether some other cause explains their judgment, this study has no way of determining.

The following excerpts are typical of comments favoring language requirements:

"At least one foreign language should be taught in the schools, preferably beginning in the grades, probably with 4th or 5th. University curricula should require modern foreign language much more generally than is the case at present."

"One argument in favor for the language requirements and that is it keeps a lot of would-be graduate students away from our overfilled graduate schools."

"Even if one becomes but a lame reader of French and German, he is, I think still much the better off for being able to read a little, and, more important still, to have gained during years of graduate study an appreciation of the great foreign contributions."

"My research would have been all but impossible without a good knowledge of German and French. To me it therefore seems important that a candidate should actually know German and French before he enters the graduate school. It might be argued, however, that if I hadn't known how to read those languages I might possibly have concentrated on more important subjects and turned out a far better piece of research. I am not inclined to agree, but on the other hand, I have known a good many graduate students who did excellent geological research without being able to read any foreign language. I don't know what should be done about the language requirements, but if I were free to experiment, should first see what could be done by making the present requirements more rigid. It seems to me that the average of research men in geology would be vastly improved if their general scholarship were higher. They waste a lot of time doing things that the Europeans have already done better, and they lack perspective."

"The language requirements are obviously necessary, because American students need compulsion to do even the things essential to their own progress."

"The study of any foreign language is broadening and a wonderful aid in the perfection of English. It would be very unwise to sacrifice culture and education for technical training of Ph.D.'s."

"Knowledge of any foreign language broadens one's use of his own and gives him a distinctly cultural value in many ways not included in the use of the languages themselves."

"For all scientific lines high-school French and German are essential. Reading knowledge acquired early clears the way for the college course; this ability should be acquired in pre-college days if the full advantage is to accrue in the scientific college courses."

"This questionnaire seems to assume that the value of languages (if any) is purely utilitarian. I submit that a Doctor of Philosophy should be *educated* and that no modern education is worthy of the name which does not include French and either German or Latin."

Emphasis was given to the need of changed standards and different methods of administering the language requirements:

"Language requirements for the Ph.D. under conditions which exist in most institutions are a farce. If foreign languages are necessary (and they are in many branches of science) then the candidate should be able to read them well before beginning his work leading to a Ph.D. The ever-increasing abstracts in English of scientific articles makes the foreign language requirement less necessary in most cases. Special articles could be translated by some competent student of the language under consideration. If languages are to be required my advice is have the candidate pass his language examinations during his first year graduate work or at least by the time he announces his candidacy."

"I have no sympathy with the common custom of committing a book to memory for the examination. I was not called on once to read either German or French in connection with my major work in Geology. If a knowledge of foreign language is important then those in charge of a student's graduate work should see to it that he has occasion to use languages in connection with his studies. The difficulty is too many of the professors cannot use the languages themselves. The examinations (in language) as carried out in many schools are unsatisfactory. Too much *luck* in reading 10 lines."

"In several schools where the doctorate language tests are conducted by the language departments the literary and colloquial side of the languages are the principal basis for grading the applicants—this is manifestly unfair to scientific and technical students who may be actually proficient in reading foreign tracts in their fields. I believe that in every university in which advanced degrees are offered, there should be adequate courses in foreign languages to train students in any field to read the material in their several fields; every graduate student should be required to participate in such courses; and satisfactory completion of such courses might well be accepted as fulfilling the language necessity."

"I can see no reason for insisting that a candidate be able to translate literature in fields foreign to his own as has been done by some language departments. A candidate, or his major department, is a better judge of what he may need to translate in his

later work than the department of languages. With the increasing amount of scientific work in Spanish, Italian, and other languages a student should have a broader range of choice than is commonly given."

"The test of one's facility should not be made in the language department where classical works are often used as tests, but in the science department in which the candidate is working, and chiefly on his own branch of science, since the language is supposed to be required as a tool, not as a test of culture."

"Much good would be accomplished were educators to use their influence to the end of teaching college students the art of reading a foreign language and spend less time on grammar and the hopeless attempt at conversation."

"As long as no special attempt is made to deal in foreign fields at the university or department in question I see no reason for expecting a mastery in any particular language by the student. Any student, who, upon completion of his or her undergraduate work has any intention of going on toward a higher degree, should devote at least one-third of the first year in graduate work to the study of two foreign languages. Choice *left to the student* in regard to which languages are wanted from the following: German, French, Swedish, Spanish or Italian. Determination as to the student's ability in mastering such languages should not be by an oral reading examination, but should be in the form of abstracting or writing a summary of any given foreign subject which would include not one, but several books on said subject."

The skeptics supplied their full quota of comments of which the following are typical:

"The language requirement in my opinion is an unnecessary and illogical requirement. Practically all the arguments used for it are arguments for waste. Where it is possible for a student to acquire a facility in the use of a language which one secures by a considerable period of residence among a people who speaks it I believe that to be a valuable accomplishment. On the other hand, the amount of reading done by the average scholar who does not acquire a native facility in the use of the language is not sufficient to justify the time and energy spent upon the study of foreign languages. Anything really important will be available in a translation or a translation can be easily secured. I do not believe that the argument ordinarily advanced, that a translation does not preserve the shades of meaning, is of any value. If any people ever developed the science of rhetoric to its highest degree it was the ancient Greeks. I have, however, read many of the writings of the masters of Greek literature in the original language and the only piece of Greek literature in which the question of shades of meaning is of importance and in which the value of the production does

not appear equally well in a good translation is Demosthenes 'De Corona'."

"From 1919 to 1925 I taught economic geology at the Universities of Chicago, Kansas, and Harvard. The foreign languages were not necessary in any of my research or teaching. The American literature covers the field more fully than the foreign."

"I do not consider that the language requirement as I met it, is worthwhile. If a particular subject requires knowledge of some language the student will get the tool for himself. I believe in languages in high-school and college and would make them obligatory there, but would not make them obligatory in graduate school."

"I cannot see that the language requirement has done me any particular good. It did make some difficulty in getting past the technicalities for the degree but all the information I have needed is either translated or written in English. Whether the language requirement should be eliminated or not is a question in my mind. It certainly is not vital to scholastic work though it is a usable adjunct."

"The science of geology, especially in its economic application, is so largely an American development that knowledge of no foreign language is essential to the geologist for scientific purposes while working in English-speaking countries. For field use, a speaking knowledge of Spanish is useful to more American geologists at present than any other foreign language. A working knowledge of German and French is occasionally useful in general reading, a nice thing to have, a minor cultural asset rather than a practical necessity. The dead languages are of no direct practical use whatever, and I doubt if their study is any more helpful in the use of English than the study of modern languages. A working knowledge of one or two modern foreign languages should be recommended to, if not required of, all candidates for the Ph.D. degree. For the benefit of exceptional candidates otherwise well qualified, it might be best to discontinue the hard-and-fast universal application of the language requirement, but to leave it in force as a general rule."

"I probably used German and French more than the usual candidate for Ph. D. as I was a research assistant at the time of my graduate work and was required to read and abstract the geological literature of the world. At the present time one can do successful geological work without knowledge of either language as the English literature is fairly complete and the bulk of the work in economic geology is now done in this country. The only use I have of them at present is to go back to the original articles in such research work as I have done whenever the original articles are published in German and French. The greater number of

these articles are usually abstracted, however, in English and the only advantage gained is the rare instance when the abstractor failed to get the salient points."

"Too much emphasis has gone to foreign languages at the expense of English. There is a distinct need for ability to use the English more effectively as a method of presenting, that is equally as great as the need to use foreign languages as a method of gathering ideas. The acquisition of the foreign language in consequence of its being a prerequisite for the degree does not necessarily make it an efficient tool in the candidate's hands. English abstracts of a foreign article take precedence to the original, since the ability to read and translate does not guarantee the ability to 'think' in the foreign language."

"It is now 13 years since I completed graduate study and of the ensuing period 12 years have been spent in active commercial work and one in teaching. It is my candid opinion that the language most helpful to me has been English, and that much of the time spent by the average college student could better have been occupied in learning to handle effectively his mother tongue. The requirements should be more flexible, to permit at least Spanish to be substituted for one of the others. To many geologists Spanish would be far more useful than German, as we all must be more or less interested in South and Central America, both because of its geological interest, and the possibility of working there."

"I consider the study of foreign languages especially the methods of instruction under which I studied these languages largely a waste of time. The only language which I ever put to any real practical use I never studied in school. I spent two years in Venezuela. Spanish is a more useful language to more professional geologists trained in the United States than either German or French."

Various other points of view are illustrated in such comments as these:

"This is the most sensible questionnaire that I've seen in years."

"I know there is a tendency to let down in this requirement which is in line with the tendency to let down in scholastic requirement all along the way beginning in high school."

"I think that the foreign language requirement should either be made more strict or dropped altogether."

"The present requirement in most universities appears satisfactory 'on paper,' but the laxity of its administration in many places is deplorable. The standard ought to be set and maintained at a high level. Graduate students ought to be required to read German and French literature in their course work, to insure their ability to use these languages as effective tools."

"My present reading of foreign literature is largely confined to work for an abstract journal. I think that a man should be able to read fluently the literature concerning his own field but not general 'scientific' and certainly not 'literary' French or German. To quote concrete cases. A man here who was used by the Department of Chemistry to translate German papers failed in his examination because he was given a philosophical work with a chemical title. There were no familiar terms to guide him and of course he was not allowed a dictionary. A man who had been reading French fairly well was floored completely by a fairy story on his literary test. Not only did he fall down here, but as this part of the test came first, he was thrown off centre and couldn't read a perfectly simple scientific text. The tests in foreign languages should be given by the department in which the student is working; they should be thorough and as a part of his training the student should take at least one course where the only available literature was in foreign languages. I believe that the only way to learn geological German is to read German texts."

"I do not think the language requirement is important to Doctors of Philosophy, as a requirement. My experience has been that anything of sufficient importance to be sought in literature other than that published in English is worthy of securing a careful and accurate translation."

"The conventional reading examinations should be given during the first year of candidacy or even, if possible, before admission to candidacy for the degree."

The pointed suggestions and criticisms from the geologists would seem to indicate that they are far from complacent under the present foreign language standards and requirements. Reflected by a considerable number of comments, there is also a confidence in American achievement in this field not observable in those representing some of the other sciences.

CHAPTER XI

History

Nineteen universities were represented by the 130 doctors who reported in this study from the field of history. Of these 130, 105 were men and 25 were women—a larger proportion for women than in any other field. The present average age of those reporting is 40, the range being from 23 to 64 years. The average at which the Ph.D. degree was received was 33 years, this being slightly older than for most of the fields.

Of the history group 121 are engaged in teaching, 5 in research, 3 in other occupations, and 1 not reporting. Of the 121 teachers 65 are in universities, 45 in colleges or normal schools, 5 in public schools, and 6 made no report.

English was the mother tongue of 119 out of the 130, 2 were bilingual, 8 of foreign speech, 1 made no report. All but 2 of this group were examined in at least 2 languages, 17 having been examined in 3 languages, and 2 in but 1 language. Examinations were taken in German by 127, in French by 125, in Latin by 12, in Spanish by 2, in Dutch by 2, in Greek by 6, Chinese, Hebrew, English, Persian and Arabic having been accepted in 1 case each.

The time specified for taking the language examinations was 1 year before the degree for 66, before the preliminary examinations for 55, before examination on the thesis for 22; and for the remainder no time was specified or else haphazard intervals from 1 month to 2 years prior to receiving the degree.

Examinations were taken in statistics by 21, in tests by 16, in surveys by 8, and in formulae by 1. Three took examinations in state documents, 1 in research method, 1 in map making, and 1 in bibliographies.

Sixteen persons mentioned having traveled or studied abroad.

USE MADE OF FOREIGN LANGUAGES

The summary in Table XXVIII represents the estimates given by this group of the amount of reading done in foreign languages during the two periods stated. A considerable number naturally found it impossible to respond with any accuracy to the question

concerning the number of books or of pages read. One respondent says, "This question is nonsense." Other remarks are, "None," "Read extensively," "Almost no foreign languages in my research," "No foreign languages required," "Impossible to estimate," "Read Spanish extensively," "Most of research in German and French," "Never used either language, nor any other except English."

TABLE XXVIII

USE MADE OF FOREIGN LANGUAGES

	During Graduate Study				During Last Two Years			
	No. Persons	Books Read	No. Persons	Pages Read	No. Persons	Books Read	No. Persons	Pages Read
German...	35	+–10	26	2–1000	28	1–5	13	3–300
	13	11–65	7	1200–5000	3	6–25	4	1000
French...	32	1–10	18	6–1000	24	1–10	16	10–500
	23	11–200	11	1500–10,000	9	12–35	7	600–3000
Latin.....	8	1–4	10	10–250	10	1–4	4	10–500
	6	6–25	4	1000–4000	2	12–30		
Spanish...	...	.....	2	2000–20,000	6	1–5	3	200–9000
					1	50		
Italian....	1	5	1	100	2	1	...	.....
Others....	5	2–5	1	500	5	6–8	1	50
							4	500–2000

The figures shown in Table XXVIII indicate a considerably wider range of reading in foreign languages than appears for several other fields. French fully holds its own with German, and Latin has fair representation. Not even here, however, does the later reading hold up with the standard set in graduate study.

Table XXIX represents the number of years of formal language study had by the 130 members of the history group. The table should be read: 46 percent reported 2.36 years in German, 72 percent reported 2 years in German. Other items are to be similarly read.

TABLE XXIX

AVERAGE NUMBER YEARS FORMAL LANGUAGE STUDY

	German	French	Latin	Greek	Spanish	Italian	Other
Secondary School—	(46%)2.36	(28%)2.5	(65%)3.6	(12%)3.	(2%)3.	(1%)2.	.....
College or University—	(72%)2.	(70%)1.7	(52%)2.5	(8%)2.3	(2%)2.	(1%)1.	(4%)3.

The respondents' own estimate of their language skill during graduate study and in the period elapsing since is shown in Table XXX. Table should be read: 20 percent of the 130 respondents claim an excellent mastery, 46 percent a fair mastery, and 34 percent a poor mastery of German during graduate study; and similarly for other items.

These estimates of reading skill make a considerably better showing for French than for German, both in the graduate school

TABLE XXX

ESTIMATED LANGUAGE SKILL AND ITS PERSISTENCE

	Skill During Graduate Study			Skill After Graduate Study		
	Excellent	Fair	Poor	Increased	Same	Decreased
German	20%	46%	34%	17%	28%	55%
French	36%	56%	8%	31%	38%	31%
Latin	24%	46%	30%	11%	36%	53%
Spanish	43%	48%	9%	47%	24%	29%
Italian	14%	29%	57%	34%	16%	50%

and later. With 34 percent estimating their skill in German as "poor" while graduate students and 55 percent admitting that this skill has decreased since graduation, German cannot be very useful either as a tool or as "culture" for this group.

COMMENTS

A considerable proportion of advanced scholars in history are in favor of requiring foreign languages for the Ph.D. degree, but they are not in favor of the present standard requirement of German and French.

Reports were received from 130 doctors, 107 of whom expressed their convictions on the value of languages. Twenty-five percent advise allowing the requirement to be decided by the needs of the field of research, while 20 percent would keep the formal requirement as it is or make it stiffer. Against these last a number complain with some bitterness that they were required by the formal rule to study a language they did not need at the expense of one they were forced to use. Here as in most other fields scorn is expressed over the setting up of "paper standards" which are not actually enforced.

About 17 percent of those commenting have found need for both German and French, the latter being somewhat more in demand than the former. Spanish and Latin are each favored by nearly 10 percent of the historians, while Dutch, Swedish, Slavic, Greek, Italian, Portuguese, Chinese and Japanese have their advocates. A few (5 percent) insist that their language study was wasted time. Several urged strongly that all formal language examinations should be dispensed with and course and research requirements be such that students would be forced to secure a working skill in one or more languages.

These excerpts are fair samples of arguments offered for retention of the language requirement:

"Unquestionably, requirement for German, French, Latin and Greek should be continued."

"Both French and German should be required. Every scholar in any other nation is expected to have foreign languages, and our scholars should be able to stand up beside them. Lord knows, our scholarly ideals are low enough now."

"*Three* languages (French, Spanish, German) should be required for a doctor's degree."

"One would think that this matter had been settled long ago. Nothing is more ridiculous than to suppose that there is any room for doubt in this matter. The average American doctorate is characterized by an extraordinary provincialism. This is due chiefly to the fact that our students are never led to read widely or to acquire a good reading knowledge of foreign languages. Regarding the value of statistics such as the researcher will obtain by this method. I think I am correct in stating that they will be quite worthless. For example, most Ph.D.'s in Education don't know any language, and will be able to give accurate statistics. But I who have used these languages all my years as teacher and student can't give any. It's an asinine procedure from a scientific point of view."

"Provincialism will be the penalty for dispensing with the modern language requirement. This is especially true of such fields as pedagogy, which because of the type of practical interests of those who specialize in it, is likely to lose contact with its world community. Were I the head of a department, selecting members of a staff, *I would suspect the qualifications of one who presented a Ph.D.* gained in any field of history or social science, if it appeared that his institution had not found a way to make a knowledge of foreign languages a vital part of his equipment."

"The more languages American Ph.D.'s can master the more learned they will become. It gives them mastery over bibliography and facts."

"From an ideal viewpoint every Ph.D. in history should have a fair mastery of Spanish, French, German, Medieval, Latin, Italian, and Portuguese. He should also be well-grounded in Philosophy, psychology, and economics."

"In many fields more than two languages should be required. In Schools of Education there is sometimes a feeling that language requirements are useless. My experience has shown that either the professors were narrowly trained or the Ph.D. degree was far inferior to that given in other subjects. The dissertation would not require the use of foreign languages because of its formal and unscholarly character. This study, for example, is very useful but not a fit subject for a Ph.D. dissertation."

"Obviously, for fields of history before 1700 Latin should be required of all candidates."

"I do not believe in transferred discipline as an argument but modern languages are a *sine qua non* for an 'educated' Ph.D."

"No requirement at all would lead to avoidance of material in other languages; a stricter examination would waste time which might possibly be given more profitably to something else."

"A Doctor of Philosophy should be required to present a reading knowledge of two foreign languages. It at least contributes a degree of culture and intellectuality which some Ph.D.s would otherwise not acquire."

"A fair knowledge of other languages than one's own is an indispensable characteristic of any man who claims to be educated, let alone deserve a Ph.D. Latin, French and German should all be compulsory."

"Would that I had less Greek and Latin and more German and Spanish."

Representative of many statements differing from the foregoing in estimated value of the languages are the following:

"I find, as many Ph.D. students do, that a general language requirement regardless of work engaged in, is a great hardship and that the endless amount of effort required to fulfill the technical reading requirements might be much more profitably spent in the line of research."

"In ordinary investigations in American History it is evident that English is sufficient—only in certain specialized fields would languages of other peoples be worthwhile and those would be French, Spanish, and German. An appreciation of things beyond our own doorsteps can scarcely come without some knowledge of foreign languages. But as a tool in my specific profession, foreign languages have been of practically no value to me."

"My honest conviction is that foreign languages are of no use whatever to a college professor! They are an impediment rather than an asset. Instead of saying Henri Quatre why not say Henry IV King of France? Instead of saying Liberte, etc., why not say Liberty and deal with ideas rather than words?"

"German for the Ph.D. in American history is a useless relic of an outworn system. For European history the demand is according to the subject of research the student is to follow. Usually in America German authorities are unessential save in studies specifically concerning Central Europe."

"Unless one is actually to use the required foreign languages, they should not be required. The cultural argument seems to me without much weight since one will have little cultural result from studying languages merely to meet a technical requirement. I feel

that the language requirement is unnecessary, serves no good purpose (except when it is actually used in research) and is a waste of time. I can see no reason why German is more (or less) cultural than Greek, or French than Latin. Perhaps to keep up a time-honored custom, we should still punish the candidate to atone for the injury (?) done ourselves."

"Much valuable time seems to be wasted upon the study of these languages, for much of the material may be found in translation, and yet I am not prepared to say that they should be discarded."

Dissatisfaction with the way the language requirement actually works was voiced freely by many respondents of whose comments the following excerpts are typical:

"I hope some day we can correlate subjects. Could it not be possible for a History major in college to read as his language assignments in French and German History books that the Head of the History Department recommends. Ways could be found to ensure that the work is thoroughly done. All will admit that a great deal of the time spent on language study is pure waste. Give it some concrete purpose, and students would have more interest and would see the value."

"My suggestions would be these: As long as there is a language requirement for a Ph.D., no matter what its basis happens to be or what reasons are given for it, the tests used in connection with it ought to be searching enough to establish a real proficiency in the required languages on the part of the candidate. At present, the language examinations seem in some cases to be merely perfunctory and formal; and under such conditions they become a boring farce to both the instructor and the graduate student and the value of the degree is correspondingly lessened."

"I am in favor of retaining a requirement of proficiency in at least two foreign languages for candidates in a number of fields: in the social sciences, languages, music, etc., as an essential part of the cultural equipment that one who holds a Ph.D. ought to have; and in exact sciences such as chemistry, physics, and mathematics if it is true, as is often contended, that a man cannot go far in research or keep up to date without a reading knowledge of, say, French and German. In some other fields, such as education in its recent technical developments, many candidates feel that they do not need any languages but English and that a language requirement places a useless burden upon them. I do not know whether this is true or not; but if it is, I should think the requirement might as well be dropped for them. To put it in a general way, if a candidate in a highly specialized, technical field needs other languages he ought to have them; if not, he ought not to be bothered with them. On the other hand, I believe that every candidate for a Ph.D. in the broader, more distinctly cultural fields ought to acquire a real

understanding of at least two other languages as an integral part of his training."

"One reason so little use is made of the foreign language in graduate work is the fact that too frequently the instructor in charge of the student is decidedly rusty in his own knowledge of languages."

"The Ph.D language requirements as a formal and general prescription is on a par with our other formal course credits and resident requirements. The tendency is to substitute hurdles for scholarly accomplishments. In some instances and in some sectors of certain fields languages constitute real tools; in others they are a waste of time. Our directors of graduate work, especially those directing Doctor's work, should be men of such attainments and understanding that their judgments should be substituted in every case for formal requirements in the language fields as well as in the fields of resident requirements, course prescriptions, and admission to candidacy."

"I question the value of the language examinations as conducted. One of my students who went to Harvard for an M.A. was not permitted to submit Spanish and German in place of French and German although he wished to major in Latin American history. He was delayed a year on account of French which he never intended to use."

"The language requirement should be more vitally tied up with the graduate work, not treated as a sort of side-line requirement."

"It seems to me foolish to insist that the two must be French and German. I was very much annoyed to have to take time to acquire a reading knowledge of German. I had no use for it then and have not since. I see no prospects that I will need it."

"It seems absurd to me to require knowledge of languages for Ph.D. degree and equally absurd to give the degree to anyone who cannot use at least French and German. The graduate schools should give courses which *require* the languages in the process of the course. Men will perfect language control if they *use* the language, otherwise not. The language examinations for the Ph.D. are a farce anyhow."

"Concerning this matter I have thought: there should be more elasticity in the choice of foreign languages, depending upon the major study. A hide-bound rule of French and German irrespective of the field in which the student is to work seems to me to be senseless. The language examinations should be given not later than one year after the beginning of graduate work."

"I would undertake to pass an examination on present Ph.D. standards, in any modern language, given 2 months notice and the

use of a dictionary in the examination. Languages are invaluable. Why make a farce of the examination?"

"I am in favor of cutting out all the language requirements, *as requirements.* In successful business or professional careers today a man must rely upon expert help in matters in which it is physically impossible for him to have personal knowledge. I pay my doctor or my dentist rather than trust my amateur knowledge. In the same way I employ an assistant for verifying my translations from foreign languages. A mastery of French and German could only have been secured at the expense of the *more important* subjects. All my graduate students in American history know far too little American history when they get their degrees—it would be more important for them to know their subject, than to know foreign languages, desirable as the latter may be. We are reaching the saturation point in Graduate work—foreign languages will have to be left to expert translators. Do you know the difference between solitaire and a questionnaire? One wastes the time of only one person!"

"The way languages are taught it is a rare individual who learns to use them efficiently unless by his own efforts alone. For instance, I passed a better examination in French, in which I had no tutoring, than I did in German, of which I had taken two years in college. I do not believe in making Ph.D. requirements easier, in fact I think they should be made much more difficult and that on the present basis about a third of the applicants should be excluded before they come within a year of the completion of their course. This can be better done by rigid examination in necessary auxiliary sciences than in language examinations. The test of the student's mastery of languages is his ability to use the language in his research. I would recommend that the professor in charge of research students satisfy himself on this point merely by turning the student loose upon whatever foreign-language reading it is necessary for him to do and leave him to work out his own salvation or ruin. This would be far more satisfactory than the present perfunctory requirement."

The following quotations are typical of various other points of view presented:

"Professionally my knowledge of German has done me very little good, culturally it has its value. My knowledge of French is practically nil. I think the language requirements for the Ph.D. degree are about right as they are."

"So far as research work was concerned in the field of my subject, History, neither language was a direct aid. However, I am particularly pleased to have had the opportunity of study in both languages. Ability to quote in the German or from the German is a keen delight in teaching."

"My suggestion is for their requirement as an *entrance qualification* to the Graduate College. They should be required of the candidate but not during the time he is working for his degree."

"Advanced work in English, oral and written, would be valuable. The average candidate for the Ph.D. lacks good style."

"If you will pardon a somewhat dogmatic statement, I believe that the present language requirement, in so far as I am acquainted with it at the present should be materially and drastically stiffened, or else abolished. Most Doctors of Philosophy look upon the requirement as one more hurdle to overcome; they cram like callow undergraduates merely to "get by" and once having stormed the line, they bid good-bye to languages as a hard pressed soldier would cast aside some souvenir-impedimenta. Making the requirements higher would, if I am not mistaken, give much greater facility in language as a practical tool. It would promote sounder scholarship and lengthen the time for taking the degree, which in itself would not be a detriment to the swarms of youngsters now being ground out of the large educational rolling-mills. If the requirement were abolished for Ph.D.'s in American History it might not work harm. A suitable substitute should of course be provided, but I am not prepared to say just what that would be."

"I have in mind a student whose interest is in Latin American history. He has excellent command of French and speaks, writes and reads Spanish with ease—has lived five years in Peru and received the doctor's degree from the University of San Marco in Lima. Spanish is the language he needs primarily in pursuing his investigations—but the University of ———— insists that he pass an examination in German before granting the Ph.D. I consider this requirement absurd."

"It should be presumed that such languages are required because the student will need them in his study and research. To hold such examinations at the end of his graduate course is an admission that the languages, after all, were not necessary, in which case they should not be required. Such examinations should require a practical reading knowledge of the matter *in the field of major interest.* To give a student majoring in Philosophy a treatise to read in the physical sciences seems to me unfair."

The chief impression one gets from reading the unabridged letters of comment from doctors in history is not their advocacy of foreign languages, though in many cases this is markedly strong. It is, rather, the spirit of protest against things-as-they-are. They recognize that time, dignity and self respect suffer under the present practice.

CHAPTER XII

Mathematics and Astronomy

These two fields are reported together both because of their close relationship and the further fact that many of those returning data are working in both fields. This group totals 83 respondents, 74 men and 9 women. Their present average age is 38 years, the range being from 25 to 69 years. The Ph.D. degree was received at the average age of 30 years. Fifteen different universities are represented by the 83 degrees.

Teaching is the present occupation of 76 of the group, research of 5, and other occupations 2. Of the 76 teachers 60 are in universities, 15 in colleges or normal schools, and 1 in a public school.

English is the mother tongue of 77 of the 83; 2 are bilingual; 4 use various foreign languages. Eighty-one persons were examined in 2 foreign languages, 1 in 3 languages, 1 made no report. These languages were in all cases German and French excepting that Latin was the language in 1 instance and Italian in another. One person made no report on this point. In 30 cases the language examinations were required 1 year before the degree, in 12 cases before the preliminary examination, in 12 cases before examination on the thesis. For the others no particular time was specified.

Of this group 17 persons report having taken examinations in statistics, 3 in tests, 5 in surveys, 24 in formulae, and 16 in other technical instruments. Eight of the group mentioned having traveled or studied abroad.

USE MADE OF FOREIGN LANGUAGES

In Table XXXI is the estimate made by the number of persons specified of the use made of the foreign languages during graduate study and during the last two years. Such comments as the following were made by those who did not undertake to estimate the amount read: "Read many magazine articles and papers in German and French"; "Read various books in both German and French"; "Used the languages both in research and for general reference"; "Used German almost as much as English"; "Very little French used"; "Used German and French all through graduate study, occasionally requiring Latin"; "About one-third of my

reading in each—English, French, German"; "Used German, French, Italian and Latin."

TABLE XXXI

USE MADE OF FOREIGN LANGUAGES

	During Graduate Study				During Last Two Years			
	No. Persons	Books Read	No. Persons	Pages Read	No. Persons	Books Read	No. Persons	Pages Read
German...	21	1–10	26	1–1000	16	1–10	26	1–500
	8	12–75	3	1000+	1	10+	3	500+
French...	15	1–10	21	1–500	13	1–10	26	1–500
	8	12–100	9	500+	2	10+	2	500+
Latin.....			7	1–500				
	3	5–40	3	100+	1	5	2	10
Spanish...	1	2	...	.....	...	.....	2	25
Italian....	2	2–3	5	50–500	3	1–2	6	150–200
Others....	2	15–25	1	1500	...	.....	1	10

Compared with other fields mathematics majors make a favorable showing in use made of the foreign languages. Note also that the number of languages employed is greater than for some fields.

The amount of formal language study had by the mathematicians is shown in Table XXXII. This table should be read: 46 percent of the group studied German 2.33 years in secondary school and 84 percent studied German 1.8 years in college or university; and so on for the other languages.

TABLE XXXII

AVERAGE NUMBER YEARS FORMAL LANGUAGE STUDY

	German	French	Latin	Greek	Spanish	Italian	Other
Secondary School—	(46%)2.33	(28%)2.23	(49%)3.12	(7%)3.1	(4%)2.3	.....	.....
College or University—	(84%)1.8	(70%)1.8	(29%)1.8	(11%)1.88	(1%)2.	(1%)2.	(2%)1.

Table XXXIII which follows gives the respondents' own estimate of their language skill during graduate study and in the period elapsing since. This table should be read: 34 percent of the 83 respondents claim an excellent mastery, 55 percent a fair mastery, and 11 percent a poor mastery of German during graduate study; and so on for the other items.

TABLE XXXIII

ESTIMATED LANGUAGE SKILL AND ITS PERSISTENCE

	Skill During Graduate Study			Skill After Graduate Study		
	Excellent	Fair	Poor	Increased	Same	Decreased
German.....	34%	55%	11%	42%	41%	17%
French.....	45%	45%	10%	42%	45%	13%
Latin.....	15%	62%	23%	4%	46%	50%
Spanish.....	25%	50%	25%	25%	25%	50%
Italian.....	9%	36%	55%	83%	17%	....

The table shows that the mathematicians estimate their language skill considerably higher than do most of the other groups, the percentage showing "poor" falling to about one out of ten for German and French, and the decrease in skill in these languages since graduation being more than balanced by large increases.

COMMENTS

Out of 64 doctors with mathematics majors reporting 51 added comments to their formal answers. This group quite evidently believe in the utility of language. Nearly two-thirds look upon German and French as essential to advanced work in mathematics. An appreciable number (20 percent) say that Italian is becoming as essential as either German or French. Ten percent would require doctors to have language as cultural or disciplinary equipment.

Nearly one-third ask that the language requirement be no longer formal, but be made actual in the sense of requiring foreign languages as a tool throughout the graduate period. This would by implication do away with examinations by the foreign language departments. Several specifically say that the department concerned should itself decide the languages to be required and also judge the candidate's proficiency in them.

Nearly one-fourth of those commenting would leave the requirements as they are or make them stricter.

Typical of points of view favoring the languages as a requirement of candidates for the Ph.D. degree are the following:

"A good reading knowledge of *either* French or German should be required of candidates for the master's degree, and a good reading knowledge of *both* languages should be required when the student is admitted to candidacy for the Ph.D. degree."

"I believe that in mathematics I read more in French and German combined than in English. Since receiving my degree I have found it necessary to acquire also a reading knowledge of Italian."

"American schools should be more far-seeing than to permit our present language insularity to continue."

"I think that a mastery of French and German is beyond anything else the most important prerequisite for graduate work in mathematics."

"I think the German language as a reading tool should be required of students who wish to take master's degrees in mathematics."

"I consider it necessary for a student of mathematics to be able to use German and French textbooks. After several years of that sort of work, no language examination is necessary."

"At the next desk is a D.SC. in Engineering and he is being confronted every few days with German articles which he can't read. We have translators but their knowledge of technical literature is not always the best."

"I feel that the language requirement should be maintained, if for no other reason than the training afforded. When scholars from Europe visit us they know our language better than we know theirs in most cases. The whole world now is the unit and we must work in coöperation with workers in other countries."

"One German author after giving an extensive bibliography in several modern languages remarked that he gave no references to English texts since he could find nothing in English on this subject."

Various other points of view are represented in such excerpts as these:

"The greatest language deficiency of many present day candidates for Ph.D. is in English. Their ignorance of their (supposedly) native language is often lamentable and humiliating."

"Those best able to determine the question as to his having this tool would be those in the department of his major work. Language tests should be given by the members of his own department rather than those of the language departments."

"I would suggest a journal club in which the candidates would read and report on contemporary literature in their general field."

"I have had to use French, German, Italian, Dutch, Russian and Polish on one occasion or another, and could not get along without a thorough knowledge of the first three for mathematical purposes. The requirement of these languages should always be administered in a liberal spirit to suit the particular circumstances of each individual candidacy; there are cases, due to the uncoördinated state of the American educational system, in which a too strict insistence upon the requirement would be detrimental to more fundamental progress and would be unjust."

"Languages for the Ph.D. candidate are a tool of research and not a cultural asset."

"Instead of requiring, as many institutions do, the student to study literary German and French, it would be a great aid if the student were introduced at the earliest possible moment to the vocabulary he will use."

"I see no advantage to be had from requiring years or courses in what may be called the classic phase of the language as taught in the school classes for those not majoring in languages."

"The more language the better but requirements in French and German are sufficient and a stiffer requirement would in many cases detract from the concentration in the major field."

"The examiner, not the student, should select the texts used on the examination. My examinations in French and German consisted in my taking an easy book in each subject to the examiner and reading a page or so to him."

"The men in charge of the department in which a Ph.D. candidate is working are better prepared to judge the quality of a translation made as a part of the language examinations than men whose interests lie in teaching the languages required."

"In my opinion the examination should be informal and given by a teacher in the major subject, not a language teacher."

"If the examinations are not given early they should be omitted altogether. Textbooks and references in foreign languages would be enough to judge whether a student could read the languages. He certainly should not be burdened with such examinations during his last year when his time is better spent on the thesis and other examinations."

"We set our own students here to learning French and German as soon as they begin to specialize at all in mathematics."

"I sincerely wish that your efforts would do something to render less just the statement that the United States is the largest civilized single-language country in the world."

Taken as a group the mathematics doctors are more in accord on present Ph.D. language requirements than are those from most other fields. Even here, however, opposition to the results of the present system is freely expressed.

CHAPTER XIII

Philosophy

A total of 38, 34 men and 4 women, supplied data in this field. The average age at which the Ph.D. degree was received was 31 years. The average present age is 40 with a range from 27 to 66 years. Sixteen universities are represented in the returns. Of the 38 respondents 36 are engaged in teaching, 1 in research and 1 in another occupation unspecified. Of the 36 teachers 17 are in universities, 17 in colleges or normal schools and 2 in public schools.

Thirty-one of this group use English as their mother tongue; 4 are bilingual and 3 of foreign speech. Every member of this group was examined in 2 foreign languages and 2 of the group were examined in 3 languages. In all cases German and French were the two basic languages, Latin being the third language in 2 instances. Nineteen persons report that they were required to take the language examinations 1 year before the degree was conferred, 9 prior to the preliminary examinations, and 7 before examination on the thesis.

Examinations were taken by 8 in statistics, by 4 in tests, by 8 in surveys, by 2 in formulae, and by 5 in other technical instruments.

Five persons mentioned having traveled or studied abroad.

USE MADE OF FOREIGN LANGUAGES

The amount of reading reported in foreign languages during the two periods stated is shown in Table XXXIV.

Respondents in some cases offered general explanations of the extent to which the foreign languages were used instead of estimating the quantity by the number of books or pages: "Constantly used German and Greek texts in the courses, French was less used"; "Used no French"; "Used no German"; "About one-third of my present research is in German, about one-seventh in French and the same proportions in Latin and Greek"; "I could not keep up with my subject without reading fluently in German and French, less so in Latin and somewhat in Spanish."

The amount of foreign language material estimated as read during graduate study by doctors of philosophy does not differ much from estimates from other fields. This is one of the few fields, how-

TABLE XXXIV

USE MADE OF FOREIGN LANGUAGES

	During Graduate Study				During Last Two Years			
	No. Persons	Books Read	No. Persons	Pages Read	No. Persons	Books Read	No. Persons	Pages Read
German...	10	1–15	6	20–300	10	1–7	6	15–300
	4	15+	2	300+	3	15–60	2	300+
French...	11	1–15	3	200–600	12	1–6	2	200
	3	15+	2	600+	3	7–15	2	1500–2000
Latin.....	2	4–25	3	120–150	2	10–15	2	10–30
Spanish...	...	.....	...	.....	1	2	1	50

ever, in which approximately as many persons reported foreign language reading during the last two years as in the graduate period, though the average amount read seems to be slightly less in the later period.

Philosophy majors report slightly more formal language study than the average. The amount in different types of schools is shown in Table XXXV. The table should be read: 42 percent reported 3.1 years of German in secondary school, 68 percent reported 2.77 years of German in colleges or universities; and so for other items.

TABLE XXXV

AVERAGE NUMBER YEARS FORMAL LANGUAGE STUDY

	German	French	Latin	Greek	Spanish	Italian	Other
Secondary School—	(42%)3.1	(26%)2.4	(50%)3.4	(16%)3.	(3%)2.	.....	.....
College or University—	(68%)2.77	(74%)2.5	(42%)3.2	(21%)4.	(3%)4.	(3%)1.	(8%)3.7

The respondents' estimate of their language skill during graduate study and in the period elapsing since is shown in Table XXXVI. The table should be read: 28 percent of the 38 respondents claim an excellent mastery, 19 percent a fair mastery, and 53 percent a poor mastery of German during graduate study; and so on.

TABLE XXXVI

ESTIMATED LANGUAGE SKILL AND ITS PERSISTENCE

	Skill During Graduate Study			Skill After Graduate Study		
	Excellent	Fair	Poor	Increased	Same	Decreased
German.....	28%	19%	53%	19%	30%	51%
French.....	22%	64%	14%	43%	24%	33%
Latin.....	8%	32%	60%	38%	15%	47%
Spanish.....	....	100%	....	50%	....	50%
Italian.....	....	....	....	50%	50%	....

Philosophers are modest in estimating their own skill in the languages, especially in German where more than half specify their skill as "poor" and also as "decreased" since graduation. French makes a somewhat better showing, and Latin a very poor showing.

COMMENTS

Philosophy majors are more closely agreed on language requirements than those of most other fields, fully two-thirds of those commenting agreed that German and French should continue as a requirement. Out of the 37 reporting 32 express their views, 21 insisting on the value of foreign language mentioning besides German and French, Latin, Greek and Italian as useful tools.

Five writers would allow the needs of the field studied to determine what particular languages should be required. Three defend language on strictly cultural grounds regardless of practical utility. Only two are firmly convinced that time devoted to foreign language in advanced study is time wasted. One generous soul demands the language for philosophy but thinks Education ought to be allowed statistics as against one language.

Following are excerpts typical of those which defend the languages as a part of Ph.D. equipment:

"I can only say that no one can *pretend* to study any subject of importance without absolutely free use of at least French and German; the only people who think they can get along without them are those who are blissfully ignorant (and willing to remain so) of what the majority of humanity has done and thought. All of my achievements came through other languages."

"These examinations should be passed before the person is accepted as a candidate for the degree. In my judgment the student should show marked ability not only in the subjects of his major and minor fields, but should have proved ability in such foreign languages as contain important material in the special field of his research,—and all of this before he is admitted to candidacy."

"Even a subject which has no non-English literature (and such are very few), may develop such a literature in the immediate future. The present difficulty with foreign language requirements for the Ph.D. degree are two: foreign language teachers have made the endorsement of a candidate's ability to read foreign languages a merely perfunctory affair; and too few teachers of such candidates are acquainted with foreign languages or literature."

"In any well-established subject one must first see whether the Germans have found it before one can safely pick out a subject. I rather doubt the value of any field of study in which the German scholars have not worked."

"The Ph.D. degree has historically implied acquaintance with at least French and German. If students are to spend three years or more in graduate study without using foreign languages they

should receive a doctor's degree, if qualified, but a new type of doctorate should be presented."

"It is held by some persons using statistics that an examination on statistics might well be substituted for one of the foreign language examinations. I regard this position as unsound. The doctor should be able to survey the literature in his field; more than this, the amount of knowledge of statistics required of the average teacher of educational psychology or of psychology is trivial. The demands that statistics be substituted for a language does not come from such statisticians as Kelly. Persons taking degrees in literature are expected to display considerable mastery of historical method and facts, and usually have a language or two in addition to French and German. Historians and physical scientists master special techniques, languages and fields of knowledge; the notion that persons using elementary statistics have acquired a highly specialized body of knowledge is absurd."

Other points of view are illustrated by the following quotations:

"I should have been better educated, and my Ph.D. degree would have been just as good or even better academically and far more valuable to me professionally had the time spent on languages been devoted to the sciences closely related to my major interest. For example, I never did and never shall use the required German and French, except incidentally, whereas I use the biological and social sciences so closely related to my field all the time and yet no courses in these related fields were required for my degree. Instead of the language requirement I ought to have had requirements in Biology, Psychology, Sociology and Education."

"I think the examinations should be more thorough. As they exist, they are a farce."

"The reasonableness of the language requirement for the Ph.D. seems to me to rest entirely upon languages being a necessary instrument of research in the candidate's field. *What* languages and *how* much seem to me questions that should be determined by the *departments* of study, rather than by any general rule the same for all."

"I hope your findings may lead to the eventual abolition of the requirement. Although this useless requirement looks big to the prospective candidate, I think it is generally regarded as a joke by those who have been through the mill."

"Language requirements for the Ph.D. is a pure waste of time. It is safe to say that 90 percent of all who work for the Ph.D. will never use their knowledge of foreign languages for research purposes. The German that I had to learn for Ph.D. purposes I have completely lost. I have a fair mastery of French, but I cannot find time to use it. I shall do well to catch up with my readings in English."

"The chief objection comes from Ph.D.'s majoring in Education. Their complaint seems to be quite proper and for a multiude of reasons which I shall not detail. For Education majors I should be in favor of a one foreign language requirement plus a thorough grounding in statistics."

". . . . but let someone earn his Ph.D. in Education by writing up the matter!"*

As to the statement that "the chief objection comes from Ph.D.'s majoring in Education," it has one fatal defect. It isn't true. Even the most cursory reading of the comments quoted in the various sections of the study will prove this. A careful reading of the 1000 or more pages of comments returned by hundreds of writers proves it even more surely. Earnest objectors to the present language situation are to be found in considerable numbers among scholars in all fields of learning.

*Let the last objector calm himself. No one is getting a Ph.D. in education or in anything else from the present study. The two investigators making the study received their degrees years ago. And, incomprehensible as it will seem to some, they have given considerable time and have spent some $600 cash to find out the facts presented in this monograph.

CHAPTER XIV

Physics

There appear in this section of the report 123 doctors whose major was in physics. One hundred twenty of these were men and 3 were women.

The present ages of this group run from 25 to 70 years with an average of 37 years. The average age at which the degree was received was 31 years. The degrees came from 20 different universities.

Seventy-seven of the 123 report teaching as their occupation, the other 46 report being engaged in research. Forty-eight of the teachers are in universities and 28 in colleges and normal schools, with 1 not reporting.

English was the mother tongue of 118, 3 were bilingual, and 2 of foreign speech. One hundred nineteen were examined in 2 languages, 1 in 1 language, and 3 make no report. One hundred nineteen were examined in both French and German, 1 in German alone, and 3 making no report.

Fifty-seven of the 123 were examined 1 year before the degree was conferred; 31 were examined before the preliminary examination was taken; and 17 prior to the examination on the thesis.

Forty-six persons report that they were examined upon various formulae, 24 upon surveys, 11 upon tests, and 18 upon statistics.

USE MADE OF FOREIGN LANGUAGES

As in the case of the other sciences not all physicists were able to estimate with any accuracy the amount of reading in foreign languages done during graduate study or within the past two years. Some say they read foreign languages nearly every day; others that they read practically none; a few indicate that they pursued courses whose textbooks were in a foreign language; several mention continual use or say they use the foreign languages daily. Their more formal estimates are given in Table XXXVII following.

On the evidence of these statements one may conclude that physicists in general require little from foreign languages other than German and French. It appears, too, that French is less important than German, especially in the more recent period. With physicists

TABLE XXXVII

USE MADE OF FOREIGN LANGUAGES

	During Graduate Study				During Last Two Years			
	No. Persons	Books Read	No. Persons	Pages Read	No. Persons	Books Read	No. Persons	Pages Read
German	24	1–5	57	3–200	13	1–3	46	10–500
	4	6–12	20	250–2000	2	9–10	17	600–10,000
French	22	1–5	65	3–200	3	3–6	56	4–200
	2	6–30	5	250–500	...	.....	5	250–500
Latin	...	.....	...	.....	...	.....	...	.....
Spanish	...	.....	...	.....	...	.....	...	.....
Italian	...	.....	1	3	...	.....	...	.....
Others	...	.....	...	.....	...	.....	2	50–100

as with other groups, the reading of foreign languages drops after the degree is taken.

Table XXXVIII summarizes the amount of formal language training had by Ph.D.'s of the physics group. The table should be read: 54 percent report 2.19 years in German in secondary schools, 74 percent report 1.6 years in German in higher institutions; and so for the other items.

TABLE XXXVIII

AVERAGE NUMBER YEARS FORMAL LANGUAGE STUDY

	German	French	Latin	Greek	Spanish
Secondary School—	(54%)2.19	(28%)2.9	(30%)3.1	(6%)3.	.....
College or University—	(74%)1.6	(58%)1.48	(17%)1.6	(7%)1.9	(3%)1.1

In Table XXXIX is given the respondents' estimate of their language skill during graduate study and in the period elapsing since. This table should be read: 19 percent of the 123 respondents claim an excellent mastery, 54 percent a fair mastery, and 27 percent a poor mastery of German during graduate study; and so for the other items.

TABLE XXXIX

ESTIMATED LANGUAGE SKILL AND ITS PERSISTENCE

	Skill During Graduate Study			Skill After Graduate Study		
	Excellent	Fair	Poor	Increased	Same	Decreased
German	19%	54%	27%	31%	37%	32%
French	13%	66%	21%	21%	43%	36%
Latin	....	67%	33%	8%	31%	61%
Spanish	....	....	100%	66%	....	34%
Italian	50%	....	50%	50%	50%	....

The respondents of this group claim a larger proportion of "fair" and a smaller proportion of "poor" mastery than those in most other fields. They also make a fairly favorable showing among those whose skill since graduation has decreased. In drawing such conclusions, however, it is well to bear in mind that these figures are all based on subjective estimates and are, therefore, not very reliable.

COMMENTS

Out of the 123 reporting in physics 103 added comments to their more formal report. Of these, 40 percent urge both German and French as necessary to advanced work in physics, 10 percent saying that they find German essential but not French.

Other languages mentioned as necessary for certain phases of the work were: Italian, Dutch, Japanese, Spanish, Swedish, Polish. One writer urges the adoption of Esperanto as the medium for all advanced scientific writing, and suggests Ido as a possible aid. About 10 percent find languages other than English not essential, several insisting that scientists need to cultivate their English. Almost none of this group (3) advise the pursuit of the languages on cultural grounds.

Five percent of the respondents judge the present language requirements adequate and satisfactory, 13 percent would make them more stringent. The point is often urged that the requirements should be made more practical, greater use being made of the languages in advanced courses, seminars and researches during graduate residence. More than a little rebellion is in evidence against literary examinations given by language professors to students of science. It is also urged that the best form of examination is a written test of ability to translate in the field of one's specialty.

A fair impression of the type of argument used in favor of a foreign language requirement will be received from the following comments by respondents:

"In the field of physics a knowledge of German and French is quite necessary if one is to venture beyond the commonplace. At times I have wished for a reading knowledge of Italian also. Physical science is growing with such rapidity that, if one were to wait for translations, he would find himself quite behind the times."

"The language requirement should be completed earlier in the graduate work, and should add a knowledge of some system of universal language, including ability to write in this language. In addition any field that makes any pretense of being scientific should have a mathematical requirement."

"My poor mastery of these languages is a continual source of annoyance. I almost continually find special scientific articles in German and French periodicals, which cannot be found elsewhere, which would be of much greater value to me if I were more proficient in these languages."

"The study of German is invaluable for a Ph.D. student of Physics. The value of French is not so marked. I find very little

in the modern French literature on the particular branch of physics (research engineer) I am interested in."

"In my work (research engineer) we cannot do without foreign languages. Those who cannot read German and French are to a certain extent handicapped. German is most important, French next. I may need to take up Spanish and Swedish, for they are becoming active. Perhaps Italian may come before Spanish. We cannot wait until foreign scientific and engineering notes are translated into English. We must keep informed as to what they are doing."

"I am and have been departmental examiner in French and German for the Ph.D. degree for five years. The whole discussion about the foreign language requirement for the Ph.D. is futile and utterly absurd in the physical sciences. As these facts will show—a man cannot be a physicist without a ready reading knowledge of these languages:

"50 percent of the modern advance in physics is published in German periodicals.

"10-20 percent is published or available in French periodicals.

"None of these articles are available in English for at least two years, most of them never.

"The only reference books with few exceptions which are up-to-date in physics are in either French or German.

"The English have written very few books in late years for Upper Division or Graduate students and Americans *only* elementary college texts of no value beyond the second year. Germany and France are richly supplied with these."

"I think it is absolutely impossible for anyone to do *original* work in any branch of physics without a good reading knowledge of German and to a lesser degree of French. If he does not have this, he must depend on second-hand reports of what is going on in his field, and to that extent he is a handicapped scholar. I have no doubt that 90 percent of the "Doctors of Philosophy" will disapprove of the language requirement, because their main idea in many cases is the acquiring of the degree, and during their studies were dependent on their professor to keep them up-to-date in their subject. Only a few become independent scholars during their graduate studies."

"I believe in keeping the requirements for the Ph.D. high. It should be as in the past a means of differentiation between the mediocre and the able. Let us keep the Ph.D. as a mark of distinction and one that the world may recognize as representative of merit. There is a danger that in making it too easy it may lose its significance much as has the B.A. and the M.A."

"Certain requirements should exist. However more important than these is the founding of a tradition that these languages be well learned. In theoretical physics I should think that over half of the

work should be done with German and French texts and journals so that the student must necessarily learn the language. I would not particularly favor making the requirements more rigid since that would impose hardships and a great deal of nonsense involving standardization. It should be made plain to the scientific student that he can do little worthwhile work if he sticks to books and periodicals written in only one language."

"From my more than thirty years of contact with teachers, students, graduates, and professional and business men of all ranks, I have become firmly convinced that a reading and writing knowledge of French and German, and preferably also Latin or Greek, should be a requirement for all bachelor's degrees. To require it for the doctorate seems actually puerile. I groan at the knowledge that some engineering schools of "recognized rank" *require* not one hour of collegiate English, let alone foreign language; and I weep when I find that even our dictionaries define a pedagogue as a pedant. Because English is not, and perhaps cannot be, taught to Americans by the same careful methods employed in teaching Latin, Greek, French, German, etc., study of the latter languages is about the only way for Americans to learn to use any language. I count the time, that I worked on foreign languages, about the best spent of any in high school, college and graduate school. While I naturally hope my son will become an engineer, I have practically decided that he must first take a classical course in order to obtain an education unless the engineering schools revert and put first things first."

"French or German should be a requirement for the A.B. degree. The language requirement for the Ph.D. thus takes care of itself. The whole difficulty is that we allow a student to satisfy his language requirement with such a useless tool as Spanish. An educated man (B.A.) should know a foreign language. Spanish is not in general the language for the average man and Latin is not much taken. Therefore a fortiori the well educated Ph.D. man should know French and German. If there are subjects which have no literature to be read in foreign languages, I should suggest not dropping the language but dropping the subject as out of Ph.D. calibre."

"I have had to translate parts of German sentences or articles for some of my associates for years, and it seems to me that it has been their misfortune not to possess a good reading knowledge of the language."

A somewhat different point of view is presented in quotations such as the following:

"A knowledge of foreign languages is an acquirement much to be desired but unfortunately a man's time is limited to 24 hours per day and if he succeeds in mastering the splendid literature in his field in his own language, together with the abstracts of articles

written in the foreign tongue, including also the books which are translated into English, he will doubtless discover that his time is pretty well consumed. I was rated as a very good student when I studied these two languages—in fact I was among the best in the class and my statements are not prejudiced because of any dislike for the study of foreign languages."

"I do not remember a single sentence in which I could not have gotten along just as well without knowing French. My personal opinion is that French is quite decadent as far as physics and astronomy (my minor field) are concerned. I have always found German extremely difficult, yet I could not get along without it. I should like to see Esperanto, or even Ido, substituted for French in the Doctor's requirements. If Esperanto were required it would probably be possible, in a decade or so, to have all technical articles published in that language instead of in English. If this were done in America, where the Esperanto movement is more backward than in any other country, it is quite probable that other countries would follow America's lead. The language situation would then be quite effectively solved."

"In the case of physics, chemistry, and engineering I would recommend making foreign language requirements elective, and tighten up on requirements in English, particularly along the lines of exposition."

"Foreign language requirements for the Ph.D. degree should be abolished except where it is a vital necessity to the candidate's specialized field of work! This is but common sense in this day and age."

"While German has proven fairly useful at times, the labor required for me to try to keep up the vocabulary discounts much of its usefulness. I find it much easier to have German friends interpret the meaning of an article for me."

"Occasionally I find an article in French or German closely related to my work. Thus far I have had no difficulty in getting either an instructor or an advanced student in the Department of Modern Languages to assist me in translating these articles. I feel that my field of research is so large and the demands on my time for work in the English language so great that I can ill afford to devote the time necessary to keep up in the German and French. The language requirement for the Ph.D. degree ought to be flexible according to the department in which the degree is offered. Doubtless in many departments these languages are very necessary. In some departments only a slight acquaintance with a language seems to me to be really essential."

"It would be necessary for me to read German and French in my present work, were I not in a position to have all documents in which I am interested translated by an expert translator."

"I have visited over thirty colleges and universities since 1923 and have talked with many men who have advanced degrees and are now working in the field of science. From their conversation it would seem that but a very small percent of the number have much use for a reading knowledge of any language other than English. A few whose principal interest is in research admit an occasional need for some other language arises, but for the most part they find the essentials in the reviews appearing in our own magazines."

The following unclassified quotations represent various points of view:

"I learned more about reading scientific German in three months in a course where vocabulary was stressed, than during a whole preceding one year in the usual literary German course, called grammar."

"The requirement should be made earlier so that it would be of more use during the graduate research period. Perhaps it should even be a prerequisite to admission to the graduate school."

"Students of the sciences are now required to take so many collateral courses that they cannot devote sufficient study and time to languages. The remedy is obvious: there should be special classes and courses for such students, with practice in reading technical articles, and much of the ordinary material, not really essential, left out. I believe that many more scientific students would then be willing to study these languages for one or two years, knowing that emphasis was being laid only on the essential requirements for practical reading."

"I find that most technical men cannot express themselves clearly and precisely. I feel that a more rigid requirement in regard to written and spoken English might well be substituted for the foreign language requirement."

"Although I felt I had a satisfactory knowledge of French and German for reading purposes in my field I felt the oral examination I underwent was rather a farce and not in the least evidence to the examiner of the above mentioned personal conviction."

"I should like to recommend a *mother tongue* requirement of all candidates for the Ph.D. degree. Such a requirement would be vastly more important and much more to the point than the foreign language requirements, in view of the all too large number of candidates for the Ph.D. degree, not to mention some doctors themselves, who can neither speak nor write the English language grammatically, far less elegantly or even inoffensively!"

"In many cases it is a matter of chance whether you get by or not. Some pass with very little knowledge of the foreign languages in which they are examined. The major professor knows pretty

well what the student knows about his major subject, without fooling with examinations, but the student's knowledge of languages remains largely a mystery. His contact with the language departments is largely formal."

"The rigid language requirement should be modified so that graduate committees may exercise discretion in accordance with the requirements of particular student or problem."

"I would suggest modification in physics so that any two languages could be selected by the student out of a list such as one containing Dutch, German, French, Italian, or Japanese."

"I sometimes think that there is a tendency to produce large numbers of incompetent fundamentally uneducated "doctors" to serve as experts in the solution of the difficult problems of education."

Taken all-in-all it is quite evident that, based on the testimony of these doctors, no exact standardization of language requirements even for this single field is desirable; the needs are too varied. It is also evident that languages are a necessary tool in many cases and should be mastered as a tool by those requiring them. What the particular languages should be cannot be determined by tradition nor by general faculty or administrative decree. That is a matter for the department and the student. That the present system does not secure a working knowledge of the required languages, was the evident conviction of many of the respondents.

CHAPTER XV

Political Science

Thirteen universities supplied this study with a total of 53 doctors of philosophy with a major in political science. Forty-nine of these were men and 4 were women. The present average age of this group is 49 years with a range extending from 23 to 53 years. The Ph.D. degree was received at the average age of 32 years.

Forty-five of this group are engaged in teaching, 1 in research, and 7 in other occupations. Two out of 3 of the teachers are in universities, the remainder being in colleges or normal schools.

English is the mother tongue for 49, 2 are bilingual, and 2 are of foreign speech. Fifty of the 53 doctors were examined in 2 languages, the remaining 3 being examined in 3 languages. All of the 53 were examined in French, all but 1 in German, 3 were examined in Latin, 4 in Spanish, 1 in Dutch. In 22 cases the language examinations were required 1 year before the degree and in 22 cases before the preliminary examination. For 13 no time was specified.

Examinations were taken in statistics by 23, in tests by 23, in surveys by 4, in formulae by 4, and in other instruments such as public documents, bibliographies, diplomacy by 4.

Eight persons report having traveled or studied abroad; others may have done so without mentioning it.

USE MADE OF FOREIGN LANGUAGES

In Table XL is given a summary of the amount of reading in foreign languages during the periods indicated. The following quotations are from respondents who did not undertake to estimate the number of pages or books read: "Read no foreign language, employed translators"; "Read widely in Spanish and French"; "Read scores of books in French"; "Read none except foreign phrases in law"; "Used German continuously"; "Use German, French, and Spanish quite constantly".

Whether the above amounts estimated as read during the two periods represent sufficient use of the languages to validate requiring them of all Ph.D. candidates will be left to the reader.

TABLE XL

USE MADE OF FOREIGN LANGUAGES

	During Graduate Study				During Last Two Years			
	No. Persons	Books Read	No. Persons	Pages Read	No. Persons	Books Read	No. Persons	Pages Read
German...	13	1–3	13	50–1000	7	1–5	9	10–250
	3	8–25	2	1000+	...	.....	2	300–1500
French...	17	1–11	8	50–1000	7	1–3	7	10–350
	5	25–1000	6	1000+	3	11–100	2	5000–6000
Latin.....	2	4–100	2	500–1000	...	.....	1	20
Spanish...	2	1–100	1	1000	...	.....	2	150–600
Italian....	...	.....	...	.....	...	.....	1	300
Others....	1	1	1	1100	...	.....	2	200–500

Here as in other fields it appears that the amount is appreciably less during the last two years than in the graduate period.

Table XLI shows the number of years of language training had by these respondents in the types of schools indicated. The table should be read: 53 percent report 2.25 years of German in secondary school, 64 percent report 1.94 years of German in higher institutions; and so for other items.

TABLE XLI

AVERAGE NUMBER YEARS FORMAL LANGUAGE STUDY

	German	French	Latin	Greek	Spanish	Other
Secondary School—	(53%)2.25	(23%)2.1	(55%)3.2	(9%)2.4	(8%)1.9	.....
College or University—	(64%)1.94	(66%)1.74	(36%)2.4	(17%)2.3	(8%)2.25	(6%)1.6

The respondents' own estimate of their language skill during graduate study and in the period elapsing since is given in Table XLII. The table should be read: 4 percent of the 53 respondents claim an excellent mastery, 46 percent a fair mastery, and 50 percent a poor mastery of German during graduate study; and so on for the other items.

TABLE XLII

ESTIMATED LANGUAGE SKILL AND ITS PERSISTENCE

	Skill During Graduate Study			Skill After Graduate Study		
	Excellent	Fair	Poor	Increased	Same	Decreased
German.....	4%	46%	50%	14%	33%	53%
French.....	20%	60%	20%	22%	36%	42%
Latin.....	28%	39%	33%	12%	35%	53%
Spanish.....	50%	33%	17%	38%	24%	38%
Italian.....	....	....	....	100%	....	....

It is to be noted that the estimated skill in French was considerably better than in German, and that the decrease in skill for German since graduation is greater than for French. With 50 percent claiming but poor skill in German to begin with, and with

53 percent admitting a present decrease in that skill such as it was, the remaining ability among doctors of philosophy to read German would not seem to be high; possibly not high enough in all cases to be certified as "a ready reading knowledge."

COMMENTS

In this group as in several others, Schools of Education are blamed (often with open scorn) for raising the language question. But this is hardly warranted, for dissatisfaction with the present situation is quite as marked in many other fields as it is in Education.

This is well illustrated in political science, where 53 returned questionnaires and 42 of these added free comments on language requirements. About half of those touching this point would maintain the present requirement of German and French, several asking for harder examinations. Opposed to these, however, were an equal number who advise adjusting the requirement to the field concerned, or eliminating all formal language requirements. One respondent out of every six or seven explicitly condemns the requirement as an expenditure of time for unprofitable returns. Three speak of its cultural value aside from applied uses.

Here as in other groups the futility of requiring a tool for research and then putting the tool into the hands of the worker after his research is completed, as is so often done, is strongly condemned. Condemned also is the rather common practice of allowing the requirement to be satisfied by a nominal examination not accompanied by any real mastery of the language.

Illustrative of positions taken by the left wing of this group are such excerpts from their statements as the following:

"I view the language requirement as a hurdle placed on the course—not a device which is essential in this day of excellent translations."

"The chief advantage of requiring a reading knowledge of foreign languages for the Ph.D. is to furnish work for the private tutors of the language departments. The knowledge is indispensable in some cases. These need no requirements. The student will master the language which he must use."

"In this institution it is little more than a formality. Thus it becomes a source of some annoyance without being of any particular value. I would favor making the requirement more rigid in fields where it is necessary to retain it and eliminate it in other fields."

"My own experience has convinced me that the language requirement is largely beside the point except in cases of a highly specialized character. In the general field of Political Science, for example, it is entirely possible to acquire a comprehensive grasp of the information in many of the leading lines of research without a reading knowledge of the foreign languages commonly required. My observation among my colleagues and others with whom I have come in contact has strengthened this opinion. I would suggest the abolition of the foreign language requirement, permitting each head of department or individual director of research full leeway as to the necessity of requiring a working knowledge of one or more foreign languages as essential research tools in each particular case considered."

"Many fields do not require a knowledge of foreign languages for scholarly research. In my own case I found that the study of French just detracted so much from the subject and work in which I was interested. My chief object in studying French at home was to pass the test as required by regulations. This I succeeded in doing in three weeks time, and today I am as well informed in the French language as I was before taking up its study."

"The language requirement should be placed on exactly the same basis as any other technical equipment, it is no more and no less sacred. Some students will need a great deal of use of German in their chosen fields of research, others will hardly need it at all. Some will need a careful training in statistics, others would find this a waste time. Some will need skill in library research including a knowledge of bibliographical tools, while others will need special training in the tools of laboratory research. Some will need special skill in the conduct of interviews, others will require ability to construct tests. To require all graduate students to acquire all the possible skills and techniques for research (even in their own general field) seems to be a waste of time. In my own case a knowledge of mediaeval law, French would have been much more useful in my graduate research than the smattering of German I got. When the needs vary so tremendously, I should say the most satisfactory thing would be to leave it to the department concerned to determine if the student had the requisite tools for successful research in the special field chosen by him."

"After taking my A.B. I spent six years in study and travel—Asia, North Africa and Europe. After five years in Japan I was required to take one year of Japanese language to satisfy a minor. While I gained something from this review it caused me to miss a very profitable year's work under my chief thesis professor. I have always felt that that requirement was ill advised. I enjoy language study. I never resented getting ready for the language examinations. I do think it is silly to insist upon these requirements for professors who take their degrees while on leave. As a university administrative officer it always seemed senseless to me

for mature men and women to leave their teaching and spend their year's leave in studying high-school German and French. In all cases of that sort that I know of they merely get the language well enough to pass the examination and then never turn to a German or French book again."

"In my field I find all the material that I can digest is in English."

"It depends entirely on the subject. Uniform requirement, regardless of subject, is out of place. The only advantage is that this requirement does limit the number of Ph.D.'s turned out, and thus tends to raise salaries. However, Sanskrit or Hebrew would accomplish this much more effectively."

"I consider my effort in meeting the language requirements for my doctor's degree one of the most amusing experiences I had during my brief stay in the States. The exact amount of time I spent in preparation for the language examinations for my doctor's degree was as follows:

French: 2 months (3 lessons per week)
German: 2 months (5 lessons per week)

"In both cases I took lessons under private tutors. I had no previous training whatever in French. I had one year's German in college, but an interval of some sixteen years had elapsed, and I had forgotten everything—the alphabet included; so I had to start all over again. The quality of my knowledge of French and German can be readily inferred from the amount of time I spent in preparation. But in both cases the language departments managed to pass me! I thought that was something really remarkable. For these reasons I long to see the day when the ridiculous requirements be done away with in American universities."

"The language requirement should not be arbitrary—but should be adjusted to the field and the individual requirement. If the language requirement is for the purpose of showing fitness to pursue research in a particular field, then the required languages should fit the need, and the examination in them should take place at the *beginning* of the research period, positively. The language examinations are more effective as a weeding-out process than for the purpose for which they were instituted."

"The studies I pursued didn't make it necessary to use foreign languages. The language requirements were just a damned nuisance. I never use foreign languages now and never expect to. This is the second questionnaire of this form I've filled out in the last two years. I hope you reach a conclusion this time and stop other outfits from pestering us with more forms."

Defenders of the languages were not lacking as these excerpts witness:

"We are putting out too many mechanics as Ph.D.'s. One effective way of stopping it is to raise the requirements. Furthermore, nothing is quite so indicative of high scholarship as the ability to gather the best thought of the world through the medium of reading in other languages."

"College and university professors should be required to have a mastery of at least two languages other than English, except in special cases. If a Ph.D. candidate intends to go into the teaching profession in colleges or universities, it would be a boon to him to compel his acquisition of languages preliminary to the degree. If he intends following some other line, the requirements must be changed to meet his needs. For administrators and teachers in the high schools and below, I believe there is little demand for linguistic equipment; and little hope of getting it fulfilled. Here the language requirement would simply mean depriving these persons of the Ph.D. degree, and is hardly just. Perhaps two kinds of degrees should be given, one that certifies competence, the other that certifies the completion of a minimum amount of work."

"While some advance has been made during the past decade in the way of publishing the products of scholarship in the Spanish-speaking world, the idea largely prevalent in some parts of the United States that Spanish is a substitute or can become a substitute for either French or German in the field of advanced scholarship is patently absurd. Nearly a decade's experience in university teaching has shown me that students equipped with only Spanish, or only Spanish and German or Spanish and French, are immeasurably at a disadvantage when compared with the students handling French and German."

"It is my firm conviction that candidates for the Ph.D. degree are not sufficiently trained in French and German. How can a person be a scholar if the only modern language which he knows and uses in his academic career is English? The fault, however, is not wholly with the graduate student and his examiners. Real language training should begin long before the graduate years are reached."

"I am inclined to think that the requirement in the graduate work results in a perfunctory and superficial performance. I say this with something akin to regret because my training in the classical languages has taught me to appreciate the value of such studies."

"I was required to pass a test in the German Department but I never used the language to any great extent, although I believe that it is very valuable for a student of political science to be able to do so."

"Whatever can be done to cause prospective graduate students to realize the importance of *early* mastery of the languages, that

is, prior to taking up their graduate work, will be so much to the good."

"Let some language training be given in the department of specialization and that the language examination be given by a member of that department."

"This study of yours, like many another of schools of Education, misses the whole point. Even though I may never have any occasion to read a philosophical treatise in French or German, may never have to depend upon that knowledge as a part of my professional skill, still, it is an essential of my professional training. The Doctor of Philosophy degree means something more than proficiency, something more than just technical skill and accomplishment. It means a measure of general education. If not, then let's give engineering degrees in all fields, and drop the Ph.D."

CHAPTER XVI

Psychology

Ninety-two men and 28 women, a total of 120, are reported in this section of the study. These psychologists have degrees from 17 different universities. The present average age for the group is 38 years with a range of from 26 to 61 years. The Ph.D. degree was taken at the average age of 33 years.

One hundred out of the 120 are at present engaged in teaching, 15 in research, 5 in other occupations. Of the teachers 56 are in universities, 41 in colleges and normal schools and 3 in public schools.

English is the mother tongue of 106 while 4 are bilingual and 10 speak various foreign tongues. Three of the group were examined in but 1 language; 2 made no report; and the remaining 115 were examined in 2 languages. One hundred fourteen were examined in German, 118 in French, 1 in Russian, 2 make no report. Seventy-one of the group were required to be examined in languages 1 year before the conferring of the degree, 36 before the preliminary examination, 17 before examination on the thesis.

Examination was passed in statistics by 102, in tests by 37, in surveys by 87, in formulae by 27, and in various other technical lines such as laboratory technique, the use of instruments, clinical diagnosis, psycho-analysis, hypnosis, by 35.

Eleven of this group mentioned travel or study abroad.

USE MADE OF FOREIGN LANGUAGES

The psychologists' estimate of the amount of material read in foreign languages during the two periods indicated in terms of books or of pages is shown in Table XLIII below.

Comments such as the following were made by those who did not attempt a numerical estimate of the books or pages read in foreign languages during graduate study or within the past two years: "I have read German and French books more than English since 1895"; "I read French books and articles constantly"; "Copious use of both German and French"; "No use made of these languages"; "A passage now and then"; "I occasionally read a few pages".

TABLE XLIII

USE MADE OF FOREIGN LANGUAGES

	During Graduate Study				During Last Two Years			
	No. Persons	Books Read	No. Persons	Pages Read	No. Persons	Books Read	No. Persons	Pages Read
German...	49	1–25	55	3–2000	31	1–20	46	5–1000
	5	35–250	7	3000–30,000	1	30	4	1200–5000
French...	48	1–15	55	10–2000	25	1–10	42	2–1000
	5	20–150	3	3000–5000	2	15–20	2	1400–5000
Latin.....	4	1–20	2	1000	1	1	...	.....
Spanish...	3	1–2	...	.....	3	1–2	1	50
Italian....	2	6–18	1	50	1	5	1	50
Others....	2	8–20	...	.....	...	.....	...	.....

It is evident from these tables that psychologists make considerable use of German and French and read an appreciable amount in several other languages. They, like all other groups in this study, seem to be reading less since graduation than as students.

The amount of formal language study had by persons of this group is shown in Table XLIV which follows. The table should be read: 57 percent of the respondents report 2.46 years of German in secondary school, 88 percent report 2.1 years of German in colleges or universities; and so on.

TABLE XLIV

AVERAGE NUMBER YEARS FORMAL LANGUAGE STUDY

	German	French	Latin	Greek	Spanish	Italian	Other
Secondary School—	(57%)2.46	(26%)2.5	(43%)3.4	(3%)3.5	(3%)3.25	(1%)1.	.....
College or University—	(88%)2.1	(66%)1.8	(29%)2.44	(6%)2.7	(8%)1.6	(2%)1.5	(2%)1.5

Table XLV gives the respondents' estimate of their language skill during graduate study and in the period elapsing since. The table should be read: 25 percent of the 120 respondents claim an excellent mastery, 56 percent a fair mastery, and 19 percent a poor mastery of German during graduate study; and so on.

TABLE XLV

ESTIMATED LANGUAGE SKILL AND ITS PERSISTENCE

	Skill During Graduate Study			Skill After Graduate Study		
	Excellent	Fair	Poor	Increased	Same	Decreased
German.....	25%	56%	19%	13%	42%	45%
French.....	26%	68%	6%	14%	47%	39%
Latin.....	18%	57%	25%	11%	29%	60%
Spanish.....	29%	71%	....	33%	17%	50%
Italian.....	20%	40%	40%	60%	40%	....

In agreement with the rather strong showing made for the amount of foreign language read, is the psychologists' estimate of their reading skill while in the graduate school, a considerably

larger proportion crediting themselves with "excellent" than with "poor" mastery. This group, like the others, however, report a decreasing skill in the languages since receiving their degree, and in the main give themselves a middle rating as to reading ability.

COMMENTS

Ninety-five of the 120 psychologists expressed their convictions concerning the value of the languages to doctors of philosophy. Nearly half urge that German and French should be retained as requirements. Four ask that the examinations shall be more searching.

Several predict that Russian will become increasingly necessary to the advanced worker. Italian, Spanish and the Scandinavian tongues are used by some respondents in their researches. Five would restrict the requirement to one language, three of these specifying German. Fourteen percent advise abandoning specified requirements, preferring to leave the determining of the necessary tools to the department. Nine percent believe the requirement is not justified in view of the time demanded.

Just two persons mention the cultural value of foreign languages, and four would require them as a protection for the Ph.D. degree.

The conviction is expressed by several that the requirement is a convention depending solely on tradition. Others account for it on the ground that, consciously or unconsciously, we have a tendency to defend what we ourselves have been forced to meet as a requirement. One writer suggests that we place little or no dependence in subjective testimony, such as that contained in these letters, but turn rather to a scientific determination of the amount and the value of material in the various foreign languages and to a survey of the degree to which these materials are made available through abstracts in English, at the same time forecasting a possible extension of such abstracting.

Typical of comments favorable to the language requirement are the following:

"A reading knowledge of German and French should be a preliminary requirement of graduate students in all fields whether they are studying for the master's degree or the doctor's degree."

"We have too many Ph.D.'s with narrow perspective and narrowed lines of information. Contact with achievement outside English-speaking countries is essential for balance in one's own work."

"This seems a good place to state a growing conviction that some acquaintance with Russian is likely to prove a considerable asset before very long, in any scientific field; the weight of evidence is against the Russians (so to speak) and there is perhaps a very slight possibility that they will attempt some sweeping change, as the Turks have done; but it seems unlikely. Meanwhile, there is evidently a huge and growing mass of scientific material of unknown but probably large importance hidden behind the Cyrillic characters. The Chinese and Japanese are producing less work, as nearly as I can determine, and are definitely set in the direction of shifting their language to conform to the West. Esperanto, Ogden's 'basic' English, Jespersen's 'Novial,' and other attempts to face the problem squarely should have the serious and intelligent attention of every scientific worker, but of course nothing official could be done about it in the Ph.D. requirement at present, at least."

"Any let-down in the requirements for these two languages, either in any individual case or as part of university policy, seems to me to be doing an injustice to future workers who will feel their deficiencies if they are not made to learn their languages before getting the Ph.D. I read the German journals in psychology with the same regularity and thoroughness that I do the English—in fact even more since two of their journals are far above anything published in the English language. I am beginning to believe that Italian or Russian might be substituted in place of French so far as psychology is concerned. At any rate, I shall learn Italian at the first opportunity."

"In these three years I have not made much use of my language training but there is no means of predicting just when the time may come that I shall be glad of it."

"In spite of my lack of interest in keeping up with these two languages I feel that such requirements should be continued."

"The increase in international fellowships, in exchange students and exchange professors makes it increasingly desirable to have a mastery of French and German, and possibly Italian also, to prevent serious loss of time and failure properly to interpret foreign attitudes and points of view. I went up Mt. Vesuvius with an Italian, English-speaking guide, and two Brazilians and a man from Argentine. The Brazilians spoke to each other in Spanish, to the Argentinian in Portuguese, to me in French, and to the guide in Italian. I deplore the present tendency in graduate students and faculty to be satisfied with the most superficial acquaintance with a foreign language, just for the sake of 'passing' the requirements."

"To judge by what I have seen of the language preparation by candidates for the Ph.D. degree, it is as a rule not worth much. This is due to our lack of system and standards in this country.

Although we are the heirs of all the ages, we do not know anything about the educational practices in European countries. The whole of our much praised school system is an amateurish muddle. Seventy-five percent of those now earning the Ph.D. degree are probably unworthy of it if their fitness be compared with that of Ph.D.'s in Europe. The foreign language requirement should be: a thorough working knowledge of the languages, and the examination should come before the candidate is admitted to candidacy. In other words, he should have all his preparatory work behind him so that he might enter fully into his professional work. Any attempt to further cheapen the American Ph.D. degree should be fought vigorously. Its reputation is none too good abroad as it is."

"In my particular field the average specialist would be about 80 percent as effective without any language training. He could get along perfectly without a knowledge of French. The *superior* specialist, however, could increase his effectiveness considerably if he read German fluently. These remarks apply only to the Industrial Psychologist. The academic specialist would need his language more."

Convictions were freely expressed also by those who were less convinced of the necessity for foreign language:

"I'm a natural linguist and enjoy studying 'any old' language as an avocation. Have had a crack at both Sanskrit and Welch in addition to those enumerated. But I find languages utterly useless for professional purposes and see no reason why those who don't like them should study 'em."

"I regret the time spent in my early years on ancient languages."

"I believe the language requirement should be discontinued, except where it is specifically and extensively used as an instrument. It is in too many cases a hastily met technical but useless requirement—resulting in subterfuge and dishonesty as well as superficial work and attitudes."

"I did not have a single assignment that was not available in English."

"To justify the usual language requirement it is not enough simply to show that the languages are valuable to the Ph.D. candidate. It may be assumed that there are an indefinite number of courses which would be of decided value. The question is as to whether the usual two-language requirement is the *most* valuable expenditure of this amount of time and nervous energy, as compared with other possible uses of this time. My experience in supervising Ph.D. candidates has made me feel that the cost is usually much more than the value received. Thus I have right now a third year graduate student who has had two years of college

German, but has nevertheless been three times failed on his German examination. His marginal time for the last eight months has been devoted almost entirely to frantic work on German to the complete abandonment of the thesis work and with development of what is almost a neurosis on the matter. We have had several such cases. Almost always it has been my experience that the language requirement means a painful interruption of the candidate's program. Time now devoted to at least one of the languages would I feel be much more profitably spent in broadening background (so candidates in educational psychology might take work in educational sociology and in special methods) or to the acquirement of professional tools such as statistics. With the immense amount of material now available and being issued in any of the important subjects, it is practically impossible for the average busy college teacher to keep up with the literature in English, let alone French and German. The systems now in vogue for checking on a candidate's mastery of a language are most of them grossly unreliable and unsatisfactory. Careful study of this matter seems essential. The average doctor overestimates both his use of the languages and his proficiency with them. The problem can be dealt with only by educational research involving determination of amount of relevant important material in other languages, adequacy of translation and abstracting service, load which the requirement puts on candidates, and so on."

"As far as I have been able to observe only those men who have taken their Ph.D. degree in some foreign language have made any considerable use of the language since getting the degree."

"The language requirement is a hangover from the middle ages."

"The fact is that the monopoly of scientific work by French and German—especially in Education—is ended. Yet we have our inferiority complex still—we, and most of our critical 'pure' departments of arts, continue to prescribe the languages not as tools, but as intellectual hurdles—to make the path to the golden prize as hard as—well, as hard as we found it! We have come out wonderfully *post hoc, ergo proptu hoc*—so why not these fledglings."

Fault is found by those who believe our language program fails to accomplish its aims:

"It is my strong impression, based on a good deal of contact (through correspondence) with psychologists, practically all Ph.D.'s, in attempts to inveigle them into reading and abstracting foreign material, that almost none of them do it at all well—in fact, well enough to be tolerable either to themselves or to an editor who has to repair the results; this applies to myself also. In other words, the Ph.D. requirement in language is a joke—simply a survival of an honored custom, which nobody would quite dare change. It does not follow necessarily that the answer is to put

on the screws; it is not as simple as that. There is evidently some very good psychological reason why Americans are not good linguists; the most obvious guess is that they don't have to be, and however conscientious they may try to be about it they can't deny that fundamental fact to themselves. It would seem to follow that the first institution to try to enforce a scholarly standard in this respect would find its graduate registration cut in half, and the faithful but neurotic remainder would perhaps turn it into a modern language school instead of a research institution."

"There seem to be two sorts of action toward which your investigation can point—what to do with the students and what to do with the situation. My guess on the former would be that nothing much can be done; the professor in charge will continue to speak severely with one hand and wink knowingly with the other, as it were—it isn't to his interest to do otherwise. With respect to the second, it seems to me that there is some chance for some serious and intelligent group of research men to make an important contribution, by getting together facts, opinions and individuals themselves to make a profound study of 'debabelization' and what can be done about it. It will—must—be done in a few years anyway; it's a question of whether it will be done right by people who know what they're talking about, or messily by radio announcers, stunt flyers and Rotary Clubs."

"When our own Ph.D.'s have any reading to do in German they call on me to help them. I have done this again and again and have about concluded that the ordinary Ph.D. equipment in foreign language is lamentably inadequate for independent research or anything else."

"If it were assumed that, once a student passes the examination in foreign languages, he is prepared to use the language, and if professors of graduate study assigned reading in foreign languages and held the students to them the situation would be greatly improved. Removal of the language requirement is an admission of provincialism—which condition is already too great in these United States."

"A reading knowledge of a foreign language may, according to my experience, be acquired in a very short time by a diligent student if he will keep away from the classroom and the kind services offered by expert tutors. For this reason I should not consider the time spent on the mastery of languages as entirely wasted. However, if the time spent on languages in the classroom procedure is a measure of acquisition then I am of the opinion that it is almost 100 percent waste."

"Perhaps the whole matter of our giving degrees of any kind and the requirements of some of the subjects almost make education a joke to those who look deeply into the matter. If we were more concerned with helping young people to get interested in

this higher education and not so much with merely grinding out grist for degrees we might help education along further."

"It seems to me it raises the question of the function of a Ph.D. If the Ph.D. merely symbolizes a certain amount of professional training or equipment, then there is little need for the foreign language requirement, so far as actual practice is concerned. If the Ph.D. is a research degree, then one should be able to handle successfully two languages, at least, and perhaps the graduate schools could afford to be a little stricter in the language examination. In any event, it would seem that it should not be merely a form. I do not believe that any of my teachers in the graduate school were making much use of foreign languages, either in research or teaching. Perhaps there should be two degrees,—one for professional purposes and another which is strictly a research degree."

While psychologists as a class seem to be making more use of the foreign languages than workers in some other fields, they are second to none in their protest over present conditions. It is safe to say that were responsibility given this group for specifying language requirements for Ph.D. degrees, some radical changes would result.

CHAPTER XVII

Sociology

The 34 respondents in this field came from 12 universities. Thirty-one of the 34 were men and 3 were women. The present age range is from 28 to 52 years with an average of 40 years. The average at which the degree was received was 32 years.

Twenty-nine of the 34 are engaged in teaching, 4 in research, 1 occupation not specified. Twenty of the 29 teachers are in universities; 9 are in colleges and normal schools.

Thirty-two of the 34 respondents have English for their native speech; 1 is bilingual and 1 of foreign speech. Thirty-two persons were examined in 2 languages; 4 were examined in 3 languages. German and French was a standard requirement for all the 34. One was examined in Latin; 1 in Greek; 2 in Russian. Examinations in the languages were required for 22 before their preliminary examinations, the remainder having their language examinations at various periods before the examination on the thesis.

Thirty-two persons report having been examined in statistics, 25 in tests, 6 in surveys, 2 in formulae and 5 in various other technical instruments.

Seven report having traveled or studied abroad; others may have done so.

USE MADE OF FOREIGN LANGUAGES

In Table XLVI are shown the estimates of the reading done in foreign languages during the periods indicated. Instead of undertaking to specify the number of books or pages read in the foreign languages a number gave descriptive accounts as follows: "I read an occasional article", "I read no foreign language materials", "No time at present for research, hence no reading of foreign language", "Use foreign languages but little, mostly for footnotes", "Only a pamphlet or two", "Two German works were required of all graduate students", "A few footnotes and quotations", "did not use them at all", "Used French and German assignments occasionally when English copies were in use".

According to these estimates a considerable amount was read in foreign languages during graduate study by those who read at

TABLE XLVI

USE MADE OF FOREIGN LANGUAGES

	During Graduate Study				During Last Two Years			
	No. Persons	Books Read	No. Persons	Pages Read	No. Persons	Books Read	No. Persons	Pages Read
German	10	1–12	5	10–800	4	1–3	10	4–750
	4	20–100	4	2500–20,000	1	24		
French	11	1–12	7	10–1200	5	1–2	5	5–200
	2	50	4	3000–30,000	1	12	5	750–25,000
Latin	...	.....	...	.....	...	.....	1	25
Spanish	1	1	...	.....	...	.....	1	500
Italian	...	.....	1	1000	1	12	1	100
Others	...	.....	1	500	...	.....	1	200

all. Noticeably less was reported read in the last two years. This would seem to indicate that the foreign language material is not important enough in this field to demand its reading, or else that there is dereliction in scholarship.

In Table XLVII is shown the amount of formal language training had by this group. The table should be read: 44 percent of the respondents report 2.3 years of German in secondary school, 79 percent report 1.87 years of German in colleges and universities; and so for other items.

TABLE XLVII

AVERAGE NUMBER YEARS FORMAL LANGUAGE STUDY

	German	French	Latin	Greek	Spanish	Other
Secondary School—	(44%)2.3	(26%)2.2	(44%)3.6	(9%)3.	.....	.....
College or University—	(79%)1.87	(76%)1.63	(47%)2.25	(25%)3.	(6%)1.5	(3%)1.

Table XLVIII which follows sets forth the respondents' estimate of their language skill during graduate study and in the period elapsing since. The first of these tables should be read: 18 percent of the 34 respondents claim an excellent mastery, 41 percent a fair mastery, and 41 percent a poor mastery of German during graduate study; and so on for the other items.

TABLE XLVIII

ESTIMATED LANGUAGE SKILL AND ITS PERSISTENCE

	Skill During Graduate Study			Skill After Graduate Study		
	Excellent	Fair	Poor	Increased	Same	Decreased
German	18%	41%	41%	12%	38%	50%
French	27%	55%	18%	20%	33%	47%
Latin	30%	30%	40%	....	10%	90%
Spanish	25%	50%	25%	33%	67%	....
Italian	50%	50%	....	33%	34%	33%

In this group as in some others reading skill in German was estimated lower than in French, and the decrease in reading skill

in both languages since completing graduate work is rather disappointing. It is obvious that practically none are keeping up such reading ability in Latin as they once possessed. Nor can one escape the doubt that not a few were certified as having "a ready reading knowledge" which they did not possess.

COMMENTS

Sociologists do not make as much use of the foreign languages as do workers in some other fields, neither do as large a proportion of them believe in a formal language requirement for the doctorate.

Out of 34 sociologists reporting, 27 added comments to the statistical portion of the questionnaire. Of these only 5 stated that German or French is a primary requisite in this field. Seven believed that the languages do not pay for the time necessary to their mastery. Several protest against requiring particular languages, preferring to let the nature of the student's interests and needs determine.

Three defend present requirements and 2 would make them stiffer. Several urge the cultural value of language study. If left to the sociologists of this report it is safe to say that the prevailing practice would be modified, (1) by not requiring the same languages of all candidates, (2) by making more practically effective whatever requirement was set by assigning course work in foreign language texts and journals.

Following are typical statements from those who favor languages as a requirement:

"Some doctors will not have specific need for these languages in research; but a doctor should be more than a being-engaged-in-research. He should be a *cultivated man.*"

"A doctor of philosophy should be one who is profound in learning and in insight and thought. To be this I should say would naturally involve facility in reading French and German. I do not think that technical experts to the nth power should get Ph.D. degrees."

"Social philosophy must come, in part at least, from books and monographs not translated into English. Facility in a foreign language adds to the stock, capital and surplus, which a teacher needs often to draw upon. I would increase rather than diminish the requirement."

"I favor a very severe language requirement, but it should not necessarily be German or French. Some of the Slavic or Oriental tongues might often be preferable, and instead of a formal lan-

guage examination the candidate should be required to do certain tasks that could not be done save by facile use of the languages required in his case; for instance, regular reports might be required on current periodicals in the foreign language."

"So long as the Ph.D. is practically nothing but a glorified A.B. degree, based on units and a 'graduation essay' and required primarily as a teaching degree in college and university the language requirement is of little value. If the Ph.D. degree is made what it should be, a research degree, foreign languages become essential."

"Candidates should have to pursue certain courses in their major field in which texts or references are used which are printed in the two foreign languages to be mastered. The language requirement has not been treated seriously enough by graduate departments and by professors. I should very much dislike to see the language requirement abandoned for anything else."

"Perhaps more 'exposure' to a *second* language (say 2 years' study or the equivalent) plus very rigid tests on one language would be preferable to the present system, under which most Ph.D.'s do not really *know* any foreign language."

"Real scholarship should revert to works in other languages. American scholarship is woefully lacking in such versatility and orientation. Outside of translations, the work of foreign speaking scholars is almost inaccessible to the average American teacher."

Representing a somewhat skeptical point of view were such statements as these:

"Good translations have made me a bit lazy about seeking originals in French and German. I feel that language requirements should be kept up, although it seems that the Ph.D. in sociology is taking on a more research or expert twist rather than the broader cultural and philosophical outlook. This tendency seems to me to be a good one."

"My personal feeling is that the requirement should be abandoned. As an immediate step, if complete abandonment cannot be achieved, I believe in allowing the substitution of statistics and bibliographic techniques as alternatives. Foreign students in my classes have been so seriously handicapped by their imperfect understanding of English that I have been deeply impressed with the futility of expecting Ph.D. candidates to have a really comprehending knowledge of French and German. The rapidly growing pressure of the necessity to become acquainted with a wide range of scientific materials in English makes the diversion of the time needed for use of French and German particularly costly. Our urgent need is for development of specialized linguistic scholars whose prime function shall be translation of scientific materials of moment, so as to save the time of specialists in the subjects themselves."

"For some men whose interest in securing a Ph.D. is solely that they may secure satisfactory teaching positions the labor on the languages would be better used if applied to their major subjects."

"This is an age of specialists. To learn foreign languages well, and to *keep up in them,* requires a great amount of time and effort. Why not put our effort into *thinking* and have expert translators (specialists in that line) translate the most worthwhile writings in our various fields. In fact, without any vote on our part, it is silently working out that way. Who bothers to read Comte or Tarde in French when we have such excellent translations? Who in America reads Kropotkin in the Russian or Gumplowicz in the German? Why should he?"

"I think the trouble lies in the fact that two distinctions are overlooked:

(1) Some Ph.D.'s want primarily to teach; others wish chiefly to do research work. The average university (I have taught in two large ones) spoils some good teachers by insisting on research and productive work—as though good teaching were not productive—before there is promotion. Now, research needs a certain amount of searching in foreign language, but one may be an excellent teacher without digging into foreign languages. Yet even to teach one must have a Ph.D., and *all* Ph.D.'s must pass the foreign language examinations.

(2) Not all subjects have the same need of work in foreign languages. In some subjects the best books in the world are written in this country. For example, in Europe to-day Sociology is at a *very* low ebb. True, Europe produced Comte, Tarde, and others like them in the past. But to-day America is the only country that is making any very *marked* advance in Sociology."

"The present language requirements for the Ph.D. are unsatisfactory because they have become a mere formality. Candidates are not required to *use* the foreign languages in their graduate work. A scholar should acquire the habit of familiarizing himself with the foreign literature of his field. He needs the foreign languages for this purpose. But it is useless to put him through the form of foreign languages if we do not make him use them."

"They seem to me to serve as about the only check to a wholesale granting of Ph.D. degrees by certain education departments."

"I would like to see more use of the languages, but I doubt if it is wise to try to reach that end by formal regulations. If a person has ambition as a scholar, he will learn foreign languages of his own accord sooner or later. Most Ph.D.'s really have no particular use for foreign languages unless their work is closely related to them. The required languages are often not the ones which we

need later. I had French and German, but in my present research project, I need Spanish, Portuguese, and African."

"I crammed enough to pass the examinations. The men who examined me certainly knew that I did not know anything about either language. Hence I consider the examination a mere bit of red tape and so far as I know nobody ever failed. I wish I could really read German and French. As long as we have our present methods of teaching languages I don't see how a student can really master them. I am not sure whether it is best to continue as at present or to drop the requirement."

"The emphasis should be placed on ability to use the language as a *tool* and little attention paid to technicalities. My own experience in mastering French relatively well in twelve weeks—with practically no knowledge of the syntax—causes me to think that a lot of time could be saved by giving such intensive specialized courses for mature students. I believe, too, that a special course in the most commonly used Greek and Latin words would be superior to 4 or 5 years of general training in these languages."

Sociologists are seen to agree no better than those in other fields. It seems to be a rule that scholars who deal more with people than with symbols and things are less addicted to the languages. Perhaps this is one reason the sociologists are not markedly linguistic.

CHAPTER XVIII

Zoology

The field of zoology returned 195 replies to our inquiry, 167 from men and 28 from women. The ages of this group ranged from 26 to 56 years with an average of 37, the average age for receiving the Ph.D. degree being 31 years. Twenty-one universities were represented in the returns.

This group of 195 persons supplies 138 teachers, 51 workers engaged exclusively in research, 4 in various other occupations, and 2 not reporting. One hundred six of the teachers are working in universities, 34 in colleges or normal schools, and 1 in a public school.

Of this group 9 are of foreign tongue, 7 are bilingual and 179 English speaking. In meeting the requirements for the doctorate 192 persons were examined in 2 languages, 1 in a single language, and 2 make no report. The languages in all cases were German and French excepting Italian in one single instance. These examinations were required to be taken all the way from three months to two years before the completion of graduate work, 84 being examined one year before the degree was taken, 72 before the preliminary examination, 45 before examination on the thesis, 29 not reporting on this point, and 11 reporting varying dates. Twelve of this group speak of travel or study abroad.

Sixty-eight persons report examinations being taken in statistics, 48 such examinations in tests, 50 in surveys, 40 in formulae, and 49 in various other technical requirements such as various laboratory techniques, use of the microscope, electrical measurements, graphs and several others.

USE MADE OF FOREIGN LANGUAGES

The summary in Table XLIX shows estimates by the respondents of the amount of foreign languages read during the two periods indicated. Let the caution once more be urged that these figures represent at best but rough approximations. A considerable number of respondents refused to make an estimate in the number of books or pages read contenting themselves with more general descriptive terms such as the following: "Use foreign

reference books constantly", "Read current articles frequently", "Used German and French occasionally in my research", "Very little", "Not enough to keep a good grasp", "None", "A few", "None, my time is too valuable so I employ a translator".

TABLE XLIX

USE MADE OF FOREIGN LANGUAGES

	During Graduate Study				During Last Two Years			
	No. Persons	Books Read	No. Persons	Pages Read	No. Persons	Books Read	No. Persons	Pages Read
German...	45	1–25	81	10–1000	17	1–5	96	6–1000
	9	40–135	17	1200–50,000	7	6–28	9	1200–10,000
French....	42	1–25	88	3–1000	17	1–5	95	5–1000
	3	30–53	12	200–40,000	4	9–15	6	1200–3000
Latin.....	4	2–10	8	10–100	1	5	7	4–10
							2	25–500
Spanish...	4	1–8	6	50–250	1	1	9	5–500
Italian....	2	2–6	8	5–500	1	1	6	40–200
Others....	6	1–10	5	25–200	2	1–3	4	18–120

Zoology, like chemistry, shows a rather wide spread among the foreign languages used in the graduate school and in the present occupation. It is noticeable, however, that less than one-half as many report reading from 1 to 5 books in German during the last two years as read from 1 to 25 books in that language while in the graduate school. French makes about the same showing. Here again is evidence that many allow whatever language skill they have to run down after receiving their degree.

In Table L is shown the amount of formal language study had by this group. The table should be read: 53 percent of the respondents' report 1.54 years of German in secondary schools, 77 percent report 2.05 years of German in higher institutions; and so on.

TABLE L

AVERAGE NUMBER YEARS FORMAL LANGUAGE STUDY

	German	French	Latin	Greek	Spanish	Italian	Other
Secondary School—	(53%)1.54	(26%)2.25	(56%)3.16	(5%)1.93	(.5%)2.	.....	.....
College or University—	(77%)2.05	(68%)1.54	(24%)1.7	(6%)1.5	(7%)1.26	(2%)1.3	(2%) .75

Table LI which follows represents the respondents' estimate of their language skill during graduate study and in the period elapsing since. The first of these tables should be read: 18 percent of the 195 respondents claim an excellent mastery, 54 percent a fair mastery and 28 percent a poor mastery of German during their graduate study; and so on for the other items.

TABLE LI

ESTIMATED LANGUAGE SKILL AND ITS PERSISTENCE

	Skill During Graduate Study			Skill After Graduate Study		
	Excellent	Fair	Poor	Increased	Same	Decreased
German	18%	54%	28%	32%	36%	32%
French	23%	53%	24%	24%	52%	24%
Latin	11%	57%	32%	8%	41%	51%
Spanish	28%	28%	44%	50%	38%	12%
Italian	....	50%	50%	48%	26%	26%

Like most of the groups of respondents the zoologists in the main compromise by crediting themselves with "fair" mastery of the languages. Since no one knows just what fair mastery means in reading skill, these estimates can do no more than roughly show general trends. By a strange coincidence the estimate for persistence of skills since graduation shows an equal number of increased and of decreased skills for both German (32 percent) and French (24 percent).

COMMENTS

Zoologists are among the most ardent advocates of foreign languages. They are also among the sharpest critics of present language requirements. One hundred ninety-five doctors with a zoology major sent in reports in this study, and of these 162 volunteered comments on the language situation. Of the 162 nearly 60 percent testified to the importance of French and German in their field. Still others may have found them as useful without remarking on the fact. About 6 percent wanted the tests more rigid. Another 6 percent wanted the requirement abolished. A third 6 percent defended languages on cultural grounds. Fifteen respondents advised permitting the departments to decide what the requirement shall be and how it shall be met.

A small number favored requiring but one language instead of two. The usefulness of Latin to the zoologist was mentioned a dozen times. Other languages referred to were Spanish, Italian, Russian, Greek, Danish, Swedish, Norwegian.

Here as in several other departments it was occasionally urged that language tests should be made by the department and not by language teachers. Strong emphasis was placed on the need for mastering the working languages early enough to make them an effective tool while in the graduate school.

It was freely hinted by a few that many of the scientists themselves are not familiar enough with the languages to lead their students to use them.

Many zoologists almost out-Herod Herod in their defense of the languages on cultural and disciplinary grounds. Others find them indispensable as working tools. Still others simply assert that the requirement is a good one and let it go at that.

A few quotations here given are representative of those strongly advocating the languages:

"The difficulty our younger American men of science have with foreign languages is largely due to psychological attitude. Of course, we start the study of foreign language too late in school to make it worthwhile later; besides, now-a-days, one may find plenty to do in almost any field without ever coming in contact with German or French. It is good for the 'soul' if for nothing else to make all candidates for the Ph.D. degree tarry a bit and meet other minds, minds who say things just a little differently from what we do, and yet are our closest kin. Moreover, is it truly refreshing to be able to read another language! Imagine, to see a hall full of scholars—Doctors of Philosophy—and not one having the slightest knowledge of language outside his own mother tongue? ! ! Would they be real scholars?"

"In some quarters, the doctorate has been greatly weakened in recent years by the light demands put upon candidates, and much argument is still heard for further undermining this degree. A British Master of Arts would put most of us Ph.D.'s to shame for the inadequacy and superficiality of our learning, for the general ignorance and almost illiteracy we exhibit among us. Let us further relax the language requirements and cause further discredit upon the mastery of the English language, and the degree will actually *be* the laughing-stock which some of us already make of it."

"My experience with Ph.D.'s and men preparing for the Ph.D. has been the following: Whenever the familiarity with a particular language extended over a longer period (say beginning of high school or at least early college days), the candidate found little difficulty in using his knowledge in reading essays and books in foreign languages. When the requirement was approached only after graduation,—that is, during graduate work—I have found that the candidate satisfied himself with learning just enough to pass the required examination and usually tried to get his information from sources printed in the mother tongue (English). In other words, whenever a candidate has sufficient knowledge in a language so that he can use it, he uses it; if his knowledge is weak, he as a rule does not bother to apply it or improve it."

"The Ph.D. candidate should be examined not on his ability to use a foreign language but on his knowledge of the work done in his particular field regardless of the language in which such work was published."

"I am convinced that the reading knowledge of German and French with fair mastery is essential for men of science. But I am willing to allow others to judge in their own fields."

"The Applied Entomologist probably has less use for foreign languages than most other men of science. However, I would not favor lowering the standard of Ph.D. requirements."

"Ph.D.'s form a group from which leaders in education and culture should be expected and the required languages should help towards future cultural development of such prospective leaders. We have far too many 'still-born' Ph.D.'s especially in the scientific fields and alas! also in the field of art, using *art* in the general sense. Lack of horizon, lack of outside contacts, and the lack of the instruments for further cultural development are too much the rule."

"The woeful lack of knowledge of modern languages of most Americans was forcibly demonstrated at the recent Fourth International Congress of Entomology held at Ithaca."

"Our Ph.D. degree is becoming less and less of value because we are prone to lessen the requirements. This is especially true in Education. In my own field I feel this is not true."

Other zoologists take quite a different point of view as the following excerpts from their replies show:

"If the candidate is a real research man and a scholar he will get necessary information regardless of the language. If he is not, no requirement will help."

"The time used in preparing for the language examinations could be far more profitably spent in acquiring a good working knowledge of special instruments or technique that may be used in one's special field."

"There is no doubt in my mind that the language requirements for the Ph.D. degree are overemphasized."

"The requirement might be waived in exceptional cases where there is really no need of knowledge in foreign languages. The function of a university is to turn out men and women able to do research and not Ph.D.'s with standard parts like a Ford motor factory!"

"I believe from my experience talking with others about foreign books, etc., that very few Americans have a real knowledge of any foreign language. They can stumble along and guess at the meaning, but that is all. From a scientific standpoint they would be better off without them. Too often they get a false idea of the foreign writer's meaning."

"Where the major is in one of the sciences there appears to be no real need for complete mastery of a foreign language or a strict final examination by a Professor of Languages."

"I am firmly opposed to the requirement of a reading knowledge of any foreign language, because:

(1) The time spent by graduate students in preparation for examination might better be used in preparation of their researches.
(2) The worthwhile writings of foreign authors are usually translated into English, and the translations are of more value to the student than the originals.
(3) The great majority of Ph.D. people do not use their reading knowledge of foreign languages.
(4) Those who do use foreign languages would use them irrespective of any requirements of the graduate schools."

"I married an accomplished linguist who translates for me all of the foreign literature which I need to consult."

"In this day of remarkable abstracts, translated editions, etc., I don't see the value of the requirement as compared to conditions a generation ago."

"We need fewer set requirements and more evidences of creative ability."

"I feel that the foreign language requirement we almost invariably find attached to the Ph.D. is one of the many relics of the dark ages one runs across in our modern (so called) educational system. In my own case I used German, French, Latin, Danish, Russian and Italian in connection with my Master's thesis where there was *no* foreign language requirement, while I did not have to read a single word of any foreign language in preparing my Doctor's thesis, and yet I had to demonstrate a reading knowledge of French and German in the latter case!"

"From my own experience with students during the past twenty years, I am convinced that the foreign language requirement now attached to the Ph.D. degree prevents more people from going on with advanced graduate work than any other single factor. Excellence in a given field is too often not associated with ability to master foreign languages with sufficient smoothness to meet the exacting requirements of the examining officers who are themselves experts in said languages."

"Suggestions? (1) The best thing would undoubtedly be to drop this requirement entirely. If a foreign language is needed for the research involved, there are lots of people available to do the translating at slight or no cost. It is obvious all foreign reading is not of necessity covered by the present requirement—see above. (2) If dropping this requirement entirely is too progressive a step to take all at once, have each department giving the Ph.D. degree

determine the language requirement necessary for each case as it comes up, and have the reading knowledge certified to by the head (or some other designated member) of the department in which the student is majoring."

Still other thought-provoking comments were made covering a wide range of problems relating to the language requirements:

"A satisfactory excursion over the field of history of science would be much more serviceable in the end than laboriously memorizing a few pages of German and French."

"I am strongly in favor of requirements in the form of a reading knowledge of French and German for all candidates for the Ph.D. degree. But I am not in favor of a comprehensive examination which includes grammar and composition. It is not for culture that we learn these languages, but for their value in finding out what is going on in our fields of research in other countries."

"The head of the department in which the candidate is working should examine the candidate's ability to use the foreign scientific journals."

"The methods of teaching these languages are to be severely criticized. First, in a good many instances the teachers are not competent. Second, in most cases the standard methods of teaching a language are such that it is practically impossible for a student to do any more than be a parrot."

"The languages could be started to advantage in the first graduate year and continued throughout two years with regular examinations, much as in the first two years of university work."

"Some of us with a long English-Scotch-Irish-*Welsh* ancestry are not linguistic and therefore a fair mastery of one language, other than English, may be the best solution."

"Men and women of high scientific quality and ability are being held up to-day in the work for Ph.D. until they are able to stagger through an examination in German or French which would be an unworthy performance of a high-school boy or girl."

"French or German reading ability should be demonstrated before taking M.A., or in first year of graduate work. The second language should be mastered the next year, and examination passed, and the third and last year should be clear for application on thesis, with the languages as tools."

"I have aided many a candidate for the Ph.D. degree toward their language requirements and found most of them utterly lacking in this respect. This applies also to English."

"As far as medicine is concerned, I see no reason for requiring languages. In general, it seems to me now that Psychology and

other humanistic studies including political problems, social sciences, etc., are more useful in preparing for any worthwhile study and life."

"Unless you can read with fair mastery a foreign language is *little or no good* to you for you haven't time to do the translating."

"I find the knowledge of both French and German useful in general reading to translate brief passages for immediate information. For lengthy articles with my speed it is much more economical to have translations made. Translators are available at a salary comparable with that of a good stenographer. Since my work is largely administration of research, I find this plan adequate and satisfactory."

"Language as taught in most high schools nowadays is worse than useless. In the university the student usually just gets by in language courses. He should be made to see that if language is to mean anything to him it is a powerful tool, which he cannot neglect; it is pretty much like the multiplication table, no good unless practically perfect."

"I have absolutely no respect for the pseudo-science of so-called 'Educational Research'." (Such as the present inquiry.)

"The examinations I have seen are mere farces put on to meet the written law only."

CHAPTER XIX

Summary

This chapter summarizes the facts (omitting matter from "comments") from the 17 fields represented in the preceding chapters. The same categories and forms are used as for the individual fields in order to make comparison easy.

In the entire study 2,325 replies were received from doctors of philosophy, 2,117 men (91 percent), 208 women (9 percent). Since approximately 3,500 questionnaires were originally sent out, replies were received from about two-thirds of those addressed.

Thirty-two universities in all were represented in the returns, though all but about nineteen replies came from 22 universities as will be seen by Table LVI.

The average age at which the Ph.D. degree was received was 33 years. The average present age of the respondents is 39 years which means that the average person reporting has had his degree for 6 years. The youngest doctor reporting was 23 years of age and the oldest 73. Since more than 9 out of 10 involved in the inquiry came from the decade 1915-1926, it will be seen that this wide spread of ages holds for only a few.

Teaching is the present occupation of 71 percent and research of 27 percent of this group. The other 2 percent are distributed among various occupations. Of the 1,645 teachers 63 percent are in universities, 34 percent in colleges or normal schools, and 3 percent in public schools.

English is the mother tongue of 93 percent of these doctors. Two percent are bilingual, and 5 percent are foreign.

Ninety-one percent were examined in 2 languages, these usually being German and French. Seven percent were examined in 3 languages. Less than one-half of 1 percent were examined in but 1 language. The remainder, nearly 2 percent, make no report on this point. Putting these facts in another way, 95 percent of all were examined in German; 96 percent were examined in French; 6 percent were examined in Latin; 2 percent were examined in Spanish; nearly 2 percent were examined in Greek; and somewhat less than 1 percent were examined in Italian, Dutch, Portuguese, or a Scandinavian tongue.

The time when the language examinations were required with reference to the time of receiving the degree was approximately as follows: 1 year before receiving the degree, 36 percent; before the preliminary examination, 23 percent; before examination on the thesis, 17 percent; no particular time specified, 24 percent.

Testimony with regard to the technical instruments other than language in which examinations were given, is of little or no value because of the evident difference of understanding of the terms used. However, the figures will be given here for what they are worth. Examinations were reported taken in some form or application of statistics by 41 percent of the group; in tests of some kind by 29 percent of the group; in surveys by 34 percent of the group; in formulae of various sorts by 23 percent of the group; and in other technical instruments or materials by 18 percent of the group.

Travel or study abroad was mentioned by 9 percent of the writers, though it is not to be understood that everyone who has so traveled or studied necessarily thought of mentioning it in this connection, no question being asked upon that point.

Table LII shows the distribution according to occupation among the different fields represented. If mathematics is separated from astronomy it shows the highest percentage of teachers, all but 2 percent being engaged in this occupation with none devoting their time exclusively to research. Astronomy makes a very different showing with full one-fourth of all engaged in research and only 69 percent in teaching. Philosophy, history, and sociology show the next highest percentage of teachers, 94 percent in each instance. Chemistry with only 47 percent teaching is the lowest for this oc-

TABLE LII

DISTRIBUTION OF 2,325 DOCTORS OF PHILOSOPHY AS TO OCCUPATION

Major Field	Teaching	Research	Other Occupation
Astronomy (83 with math.*)	69%	26%	5%
Botany (131)	68%	30%	2%
Chemistry (590)	47%	51%	2%
Economics (145)	79%	21%	....
Education (323)	73%	26%	1%
Educational Psychology (32)	77%	23%	....
English (108)	94%	6%	....
Geography (23)	87%	....	13%
Geology (95)	56%	44%	....
History (130)	94%	4%	2%
Languages (82)	91%	9%	....
Mathematics (83 with astron.)	98%	....	2%
Philosophy (38)	94%	3%	3%
Physics (123)	63%	37%	....
Political Science (53)	85%	13%	2%
Psychology (120)	83%	13%	4%
Sociology (34)	94%	4%	2%
Zoology (195)	71%	17%	2%

*Numbers in parentheses give number of respondents from each field.

cupation, as it is the highest for research with 51 percent devoting their time exclusively to that occupation.

An interesting fact about the teachers is that 86 percent are teaching entirely in the major field in which they prepared. An additional 7 percent are teaching their major subjects plus some other subject usually closely related to their major, as for example astronomy and mathematics or education and educational psychology. The remaining 7 percent are teaching entirely outside of the field specified as a major, though in most instances there is a rather close relation between the major field pursued and the present field of teaching. Some Ph.D.'s from education are teaching psychology, and vice versa. There are cases where physicists are teaching foreign languages though usually the persons involved are of foreign extraction. Some who majored in foreign languages are teaching English.

In Table LIII is a summary of the estimated number of books and of pages read during graduate study and in the last two years by the 2,325 Doctors of Philosophy. Once more the caution must be observed that these numbers are but very general approximations and that some who from their explanatory statements must have read much, refused to estimate the amount in terms of books or pages; others indicated that they had read so little that it was not worth reporting. It is to be kept in mind that the questionnaire called for number of books *or* pages, so the report by pages is usually to be added to that by books to secure the total amount estimated. In many cases it was explained that when books were reported as read this did not always mean that the entire book had been read. In a few cases both books *and* pages were reported, the latter probably representing reading done in journals and magazines.

TABLE LIII

USE MADE OF FOREIGN LANGUAGES BY 2,325 DOCTORS OF PHILOSOPHY

	During Graduate Study				During Last Two Years			
	No. Persons	Books Read	No. Persons	Pages Read	No. Persons	Books Read	No. Persons	Pages Read
German	631	11,653	1,000	1,273,335	363	4,723	848	454,035
French	596	11,188	965	970,265	316	3,828	780	292,881
Latin	90	2,238	109	92,075	43	195	65	12,366
Spanish	42	1,719	30	78,060	25	397	32	16,549
Italian	25	418	66	20,051	21	133	43	10,696
Greek	11	852	10	19,445	7	25	8	2,060
Dutch	8	69	10	3,435	5	34	7	3,118
Others	22	249	27	14,524	11	33	31	11,770

One thing noticeable from this summary is the quantitative order of the languages: German, French, Latin, Spanish, Italian. Latin, as shown in earlier sections of the study, maintains its place

largely through its use by the language groups, with some help from history and philosophy.

A total of 1,631 persons reported some estimated definite amount of German read and 1,561 persons of French read during graduate study. During the last two years the corresponding estimates were 1,211 for German and 1,096 for French. It will be noted that not only is there a drop of 28 percent in the total number reporting foreign language reading, but that the average amount estimated as read per person is much less for the later than for the earlier period. The fact, frequently commented on throughout the report, seems to be that reading foreign languages is kept up but indifferently or not at all by many Ph.D.'s following the receiving of their degree. This decline holds for all fields, but less for some than others.

Table LIV shows the amount of formal language training had by the 2,325 respondents. Several interesting facts are revealed:

(1) In all the leading languages except Latin more persons received their training in colleges or universities than in secondary schools.

(2) Almost exactly half of our group of 2,325 had German in secondary schools (an average of 2.34 years), and the same proportion (51 percent) had Latin (an average of 3.29 years).

(3) Three-fourths of the group had German in higher institutions, but only one-fourth (27 percent) had Latin in higher institutions.

(4) Only one-fourth (26 percent) had French in secondary schools, while two-thirds (67 percent) had French in higher institutions.

(5) Only German, French and Latin claim any large proportion of the group at any stage of their schooling.

TABLE LIV

AVERAGE NUMBER YEARS FORMAL LANGUAGE STUDY OF 2,325 DOCTORS OF PHILOSOPHY

	German	French	Latin	Greek	Spanish	Italian	Others
Secondary School—	(50%)2.34	(26%)2.53	(51%)3.29	(8%)3.	(2%)1.58	.....	(4%)2.2
College or University—	(75%)1.98	(67%)1.78	(27%)2.26	(10%)2.39	(5%)1.7	(2%)1.3	(3%)2.

Table LV shows the respondents' own estimate of their language skill during graduate study and in the subsequent period. This table should be read: 20 percent of the 2,325 respondents

claim an excellent mastery, 54 percent a fair mastery, and 26 percent a poor mastery of German during graduate study; and so on for the other items.

TABLE LV

ESTIMATED LANGUAGE SKILL AND ITS PERSISTENCE FOR 2,325 DOCTORS OF PHILOSOPHY

	Skill During Graduate Study			Skill After Graduate Study		
	Excellent	Fair	Poor	Increased	Same	Decreased
German	20%	54%	26%	27%	31%	42%
French	25%	56%	19%	25%	34%	41%
Latin	21%	48%	31%	13%	33%	54%
Spanish	34%	40%	26%	39%	22%	39%
Italian	18%	40%	42%	56%	29%	15%
Greek	29%	46%	25%	25%	25%	50%
Dutch	32%	36%	32%	37%	57%	6%
Others	35%	45%	20%	43%	42%	15%

Table LV contains data extremely significant for the whole study, though we must still keep in mind that the figures are subjective estimates, and that these do not agree wholly with certain other evidence (See paragraph 5, Chapter XX). It is quite apparent that an interpretation can be given these data which will in the judgment of some make the total situation appear not so bad after all. It can, for example, be correctly said that 74 percent in German and 81 percent in French rated themselves as fair or better in the required languages while they were pursuing graduate work; and that the showing is not far different for the next more important languages. Furthermore, for one-fourth or more, language ability in the two required languages is reported to have increased subsequently.

To such an unqualified interpretation there are several objections, however. One is the question whether the 54 percent crediting themselves with a "fair" reading skill in German and the 56 percent with this degree of skill in French, possess a "ready reading knowledge" of these languages as required by practically every institution of the Association of American Universities. If the scores upon scores of confessions, accusations and citations of examples given in the thousand pages of comments are to be taken seriously one can but reject the equivalency. The weight of evidence from the informal statements is very heavily against so favorable a view of the situation as these subjective estimates of language skill might at first glance seem to warrant.

A second factor to be taken into account seems to the writers a very serious one. This is the number (from French 19 percent to Italian 42 percent) who report themselves as "poor". A prac-

tically universal requirement applied to mature scholars which fails to secure the desired response from so large a proportion *who are accepted as meeting it* is paradoxical if not absurd. In a measure it justifies the remark so frequently met in the "comments", that the language requirements are "a farce", or "bunk".

Related to these objections but not to be charged directly to the administration of the language requirements, is the fact that the percentage showing decrease of language ability subsequent to leaving the graduate school reached 42 percent and 41 percent respectively for German and French. One of the measures of value of any subject of study is its continuing interest and use. If languages are necessary for graduate study why are they not necessary in using the fruits of that study in later occupation for which the study prepares? If necessary in the later occupation why do so many lose what skill they once possessed? It would seem that there is a problem here which needs further attention.

It was remarked in the third paragraph preceding that some of the figures of the table are at variance with evidence found in

TABLE LVI

DISTRIBUTION OF 2,325 DOCTORS OF PHILOSOPHY AMONG 27 AMERICAN AND 5 FOREIGN UNIVERSITIES AND AMONG 17 FIELDS OF LEARNING

UNIVERSITIES REPRESENTED	Mathematics and Astronomy	Botany	Zoology	Geology	Physics	Chemistry	Philosophy	Geography	Sociology	History	Economics	Educational Psychology	Education	English	Foreign Languages	Psychology	Political Science	Total
1. California	18	9	30	15	14	50	2	1		19	5		12	5	6	2	4	192
2. Catholic	2		1			1	2		1	3	1			1	7	2		21
3. Chicago	22	14	24	11	14	31	6	1	7	9	5		26	8	11	7	5	201
4. Clark	1		2	1	6	8		14	5	12	2	1	4			24		80
5. Columbia	4			15		121	2			1	49	17	157	31	2	4	1	404
6. Cornell						1	1											2
7. Harvard	6	4	8	3	3	16	2			9	10	1	6	8	10	5	3	94
8. Johns Hopkins	5	3	4	3	8	12				4	4	1	2		1	4	4	55
9. Illinois	5	9	20	3	10	56	1			3	8	2	11	6	4	1	4	143
10. Indiana	2	4	3	3	5	7			1		3				1	6		35
11. Iowa	6	6	10	13	14	37			3	15	5	3	50	7	5	29	15	218
12. Kansas			2			2				1								5
13. McGill		1	1	1	3	17												23
14. Michigan	4	8	15	4	10	28	2		1	4	6	1	1	8	6	6	2	106
15. Minnesota									1				3					4
16. Nebraska		6	1		1	8	3						3	1	2	2		27
17. North Carolina		1				11	1		2	1	1		1	7				25
18. Northwestern		1	5		3	14			1	4		1		1	3	1		34
19. Ohio		7	23	1		61	6		1	2	2	1	12	1	3	6	1	127
20. Peabody													1					1
21. Pennsylvania	2	3	6		1	7	2	1	5	15	16		12	2	10	8	4	94
22. Princeton					1													1
23. Stanford	1	5	11	8	5	14				8	7	3	14	7	6	11	5	105
24. Toronto		3	2	2	4	11	2			1								25
25. Washington		15	2		6												1	24
26. Wisconsin	1	29	17	6	9	45	1	5	4	13	18		4	2	16	2	4	176
27. Yale	3	3	8	6	5	32	4	1	2	6	3	1	4	13	7			98
28. Foreign (European)	1				1		1								2			5
Total	83	131	195	95	123	590	38	23	34	130	145	32	323	108	102	120	53	2,325

the informal comments, and reference was made to the same fact in the paragraph next following. No one can say, of course, just how the informal statements volunteered by respondents ought to weigh as against the more formal estimates given in response to definite questions in the questionnaire. Taken by themselves the many pages of comments give a very gloomy view of the language situation as it now exists in our graduate schools, a view much less favorable than that presented by our table. Since there is no way in which the one can be checked against the other, each reader must draw his own conclusions.

Table LVI shows the sources of the degrees for the doctors of philosophy included in this study. The small number from some universities is due to the fact that name lists with present addresses were not available in all cases. Such a list was received from one or two universities too late for inclusion. Those from foreign universities found their way into the list by the taking of a second degree or by some accident of alumni records.

CHAPTER XX

Conclusions

When both the data *and* the comments returned in the study are taken into account, certain facts and implications stand out clearly concerning the part played by foreign languages in the Ph.D. requirement.

1. Judged by the 1,000 pages or more of comment by respondents there is no agreement as to the purpose sought through the language requirement even within a particular field. Three chief reasons for the requirement appeared over and over in the comments:

(1) Foreign languages are for some fields a necessary tool or instrument, especially in research, somewhat less for teaching.

(2) Foreign languages are traditionally a badge of culture; an evidence of attainment.

(3) The languages are a hurdle in the way of attaining the highest degree and, therefore, act as a deterrent to those of least ability or enterprise.

Besides these three outstanding functions claimed, there were others which, because of less frequent mention, may be called secondary, such as the following: American scholarship is already too provincial; American Ph.D.'s are "laughed at" by European scholars because of our lack of language; the specialization required for the doctorate is narrowing; languages will help save from the ruts; foreign languages are a source of recreation and pleasure for some.

2. Considered as a working tool for advanced scholarship, foreign languages must now share with various other instruments of research and instruction, such as statistics, surveys, formulae, techniques having to do with laboratory apparatus, library methods and the like. In no single field does it appear from our study that foreign language is not essential for *certain types* of problems. Where such problems are involved, language becomes indispensable and will be demanded as a matter of course. In no field, however, unless it be the languages themselves, is foreign language considered by those reporting as necessary for *every* type of problem.

Where problems are involved toward the solution of which language can offer little or no help, then language is no more a tool than statistics or mathematical formulae would be for the student of literature. To illustrate: Certain phases of educational administration as developed and practiced during the last decade or two in the United States have no counterpart and hence no significant literature in foreign countries. For specialists in this field German and French are not working tools. In some aspects of educational psychology, however, the Germans are making distinctive contributions and German becomes by this fact a tool for workers in this field unless it should be proved that translations and abstracts serve the purpose.

Considering foreign languages solely as a tool we may, therefore, conclude that *there is no justification for a blanket language requirement applied to all candidates for the Ph.D. degree.* The necessary tools for any field or problem can be told only by the specialists concerned, and workers in other fields have no more right to dictate here than the layman has to tell the surgeon what instrument to use in an operation.

3. If language is looked upon as an evidence of culture essential for the Ph.D. degree, then those responsible for setting the standards for this degree have both the right and the duty to fix language requirements just as they have to fix other requirements. This point of view involves of course the old controversy of the cultural value of foreign language. It also involves an even more pressing question, that of the meaning of the Ph.D. degree. If the degree is to take its tone and quality distinctly from the "humanities," then surely the languages are a valid requirement of all candidates if language is to retain its historical significance. If, on the other hand, the degree is to stand for a certain amount of specialized learning, coupled with supposed ability to make successful contribution to the field in which this learning lies, then "culture" must broaden its meaning sufficiently to include this type of content or else we must refuse the degree to those lacking culture in the linguistic sense. For highly specialized learning and techniques adopted to particular fields will beyond question continue to be demanded for the doctorate.

4. The hurdle argument is a difficult one to maintain. These are advanced students picked by the selective process of eight years of study above the traditional elementary school, and they supposedly, therefore, represent an average of ability well toward the top. They know how to study. They are at the height of

their powers. They are capable of independent initiative and self-direction. They have purpose, for most of them leave fairly acceptable occupations; they enter the graduate school at the age of thirty, and spend some thousands of dollars in order to secure the degree. They are capable of doing, and they set about doing, rather difficult things in their graduate work. Now why should an elementary reading knowledge of a foreign language which is regularly assigned to pupils of 12 or 14 years and easily mastered by them, prove a hurdle to these picked scholars of 30 years?

And if hurdles are needed to shut out those aspirants whose ambition is higher than their intelligence quotient, why cannot these hurdles be found in the courses, the seminars and the researches of the respective fields themselves? Is it not a reflection on any field of learning and its workers to assume that barriers must be borrowed from another field to exclude incompetents? If adequate tests of ability and achievement cannot be found within any particular field, is this not evidence that the field lacks the content which ought to be demanded for the granting of the highest academic degree?

5. A disquieting fact bearing alike on the tool, the cultural and the hurdle significance of the languages, is that the requirement fails relatively to function. Table LV reveals the fact that the doctors themselves do not on the whole rate their own language skill very highly, and many of them admit that it decreases as they leave the graduate school and get into their work. Further, in the many comments returned, it was the rule rather than the exception for the writer to confess for himself or assert for the candidates under his supervision, a serious lack of mastery of the required languages. Statements were freely made that from a "standing start" three weeks, or six weeks, or three months of tutoring or of cramming did the trick in one or the other of the languages. Some confess that they never were able really to read the languages credited to them by complaisant examiners. Examiners admit that they pass students who cannot read intelligently any foreign language chapter or article, at least without painful consultation of dictionary and grammar. Professors very generally lament that their graduate students can take no assignments in foreign language materials. Young doctors more than hint that one reason so little use is made of foreign language materials in some departments is that but few of the professors can themselves read any language but English. These complaints come not from one or a few departments but from *all,* even from foreign language

departments. The testimony would seem to indicate that only an undetermined minority of graduate students (we will leave the professors out of account) can read the foreign languages with real facility at the time of their graduation. These facts lead one to wonder whether the doctors' estimates of their own language skill as "excellent" or "fair" may not be a little too optimistic.

How much, then, of tool value, of culture value or of hurdle value can there be in such partial learning? Probably not much more than there would be in such a grasp of geometry as would enable a student to recognize a triangle but not know whether or not he had correctly proved the sum of its interior angles to be equal to two right angles. Based on the evidence returned by our 2,325 doctors of philosophy we may conclude that *under present conditions our actual Ph.D. language attainment is not sufficient to make the languages function satisfactorily as tools, as culture or as hurdles for a considerable proportion of the candidates.*

Now let us see where this section of our study leaves us. Hundreds of our respondents have asserted unqualifiedly that foreign languages are essential (often "absolutely essential") to research. Other hundreds have with equal certainty proclaimed that, on the whole, American Ph.D.'s are grossly deficient in the languages. All would agree that the chief purpose of graduate study is training in research. If we should throw these claims together into the form of a syllogism we would have something like this:

a. Mastery of foreign languages is necessary in order to be a successful worker in research.

b. The majority of American doctors of philosophy do not have mastery of foreign languages.

c. Therefore: The majority of American doctors of philosophy are not successful workers in research.

If it is objected that this is pushing the matter to an absurd conclusion we will grant it. But we will also call attention to the fact that the fault is not in the reasoning but in the validity of either the major or the minor premise. *If* we accept the sweeping major premise as applying to all research, as many respondents do in their assertions, and *if* we may credit the testimony so freely given to the effect that so many American scholars are "one-language" persons, then are we not of necessity committed to the conclusion?

It is the judgment of the present writers that the fallacy lies chiefly in the major premise. For, necessary as it is to know and

make use of the discoveries of scholars in one's field regardless of speech or nationality, yet there are some fields of research in which American workers lead. There are sections of at least some fields in which no foreign language materials are available. There are increasing numbers of translations of important reports. There is the constantly growing number of abstracts. And there are the professional translators now being employed by many graduate departments. Successful work in research can in many cases be carried on without the research worker being able himself to use a foreign language. This conclusion does not, of course, touch the question whether such a person is "cultured" or not.

6. Defense of the value of the languages is frequently strongest by those who admit that they read little or none of them, but believe nevertheless that they are valuable and should be required of all Ph.D. candidates. In numerous cases persons who, according to their own statements, have not read more than 100 to 200 pages of German or French since entering upon their graduate study, assert with complete finality that a knowledge of German and French is indispensable to advanced scholarship. Data given in connection with such statements are too meager to explain the reason for the conviction. Some of the hypotheses that occur to one are:

(1) These persons really feel their own handicap and would save others the error that they have made.
(2) Recognizing their own linguistic shortcomings, a "defense mechanism" is set in operation and unproved claims are made for what they themselves feel they lack.
(3) They are uncritically following custom and tradition which have ascribed high value to the languages. They want to classify themselves in good company.
(4) They have a general idea that high standards should be maintained, and the languages are said to correlate highly with ability and achievement.

7. There is rather general dissatisfaction, regardless of fields or specialties, with the entire language situation in American education. There are many who think that one or two languages should be required of all secondary school students. There are others who would make entrance into the graduate school conditioned on a reading knowledge of one or more foreign languages. There are some who would require this reading knowledge for the master's degree, and thereby insure it for the last two years of graduate

study. There are still others who believe that language, like any other technical tool, should be left until interest reveals the field of scholarship to be entered upon, and then such instruction be provided for language study (without credit) as would give a tool mastery of the language needed with the least possible expenditure of time.

Especially is the foreign language instruction that is given both in high school and college, criticized. This criticism falls not only on method of instruction but also on subject-matter read. The complaint is made that prospective science students are held to plays, fiction and literature in general to the exclusion of the vocabulary and thought-forms of science; and that grammar is over-emphasized at the expense of vocabulary and abundant content reading. In proof of the validity of their criticisms they cite the alleged fact that few students from high school or college either can or do read any appreciable amount of foreign language material outside their required courses. The most emphatic criticism of all, however, is that against "Ph.D. courses" in German and French for graduate students, which employ the method and sometimes the materials of the high school or the college, thereby showing an indefensible lack of adaptation to perfectly definite needs.

8. Divided opinion exists concerning who should pass on the language attainments of Ph.D. candidates. Some ask that this be done by the language departments concerned. A larger number demand that the major department shall determine when the requirement has been met. It is evident that there is objection to the character of examinations sometimes given by language departments. On the other hand, there seems to be some distrust of language standards set by major departments. If a principle mentioned earlier in this chapter could prevail, namely that language be assumed a necessary tool wherever it is demanded by the problem concerned, then advanced courses, seminars and the research itself would seem to be the natural and sufficient method of determining language efficiency.

9. It is interesting to note the dogmatic assurance with which many respondents speak of educational values. Not infrequent are the unqualified assertions that fields which find no need of foreign languages are unworthy of recognition in a company of scholars. Others proclaim that there is *no* field of research in which foreign languages are not essential; and this in spite of the fact that no one of the 17 fields except foreign languages them-

selves, failed to turn up respondents who told of researches in connection with which no foreign sources existed. Some assert as if objectively proved, the proposition that what we need is "more of grammar and syntax" in our foreign language courses. Balanced against these were equally strong contentions that we need "less grammar and more actual reading." It is freely and positively stated, not once but many times, that no one is questioning the utility of the language requirement except meddlesome students of education. Education, sociology and engineering are with finality placed outside the pale as fields worthy of consideration for the doctorate.

These facts and many others of similar nature which appear in the returns suggest a problem for the psychologist. For the doctrine of the "transfer of training" evidently suffers here. These respondents are scholars who require objective tests, verified facts before reaching conclusions in their own respective fields; but when it comes to educational values, unproved opinion is often stated as known fact. When working on their own problems these persons approach large generalization with appropriate caution. But many of them take rather wild "inductive leaps" from very restricted bases of particular instances insufficiently proved, when discussing the values of the languages. There would seem to be truth in the suggestion offered by one respondent to the effect that the testimony of doctors of philosophy would have to be taken with full allowance for unreliability due to selfish interest, uncritical opinion adopted from prevailing custom, failure to make sharp and clear definition of the purposes to be sought by a language requirement, lack of sufficient pertinent information, over-readiness to generalize in unfamiliar fields.

10. In the minds of many doctors of philosophy teaching distinctly ranks below research as a vocation. Frequently the statement was made that teaching had interfered with research so that continued use of the languages was in particular cases impossible. That teachers need to keep up with reports of progress made by workers in other countries, seemed in many instances not to be assumed, while the statement was frequently made that those engaged in research must be so informed. A more direct evidence of the low rank given teaching was the insistence appearing in many of the returns that a new degree should be adopted for all advanced scholars except those preparing distinctively for research, and especially should it apply to those engaged in teaching or any phase of education, the Ph.D. degree being refused such workers.

This subsidizing of research at the expense of teaching accords in general with the practice in universities, where the man who "produces" is at an advantage over the one who teaches. In theory, that is in terms of intellection, we may concede that nothing that goes on in society is of more importance to the race than the education of the young. In practice, and in terms of emotionalized attitude, we still continue the historical placing of teachers lower in the vocational scale than the functions to be performed would seem to justify.

Related to the point of view just stated, the defense of education as worthy of a place in the family of arts and sciences is no part of this paper. Yet the frequency and the violence of the attacks made on this field by not a few of the respondents leads one to recall a somewhat analogous situation at Harvard a little more than a century ago when it was proposed to admit "natural philosophy" into the sacred company of the languages and mathematics as a part of the curriculum. Bitter was the battle and fierce the struggle between the modernists and the conservatives. The same conflict was waged over English and various other subjects. Such a conflict always takes place when any new section of human culture undertakes to organize itself as a distinct aspect of social experience and to offer itself for inclusion in the curriculum. Things-as-they-are forever resist change. Each of the physical sciences has had to pass through a period of conflict and opposition waged by the "in's." So with the social sciences, several of which are hardly yet in good standing with the traditional fields. Education as every other section of culture, must in the processes of its evolution prove itself in the face of skepticism, rebuffs and scorn. And this is no doubt best in the long run for all interests concerned. But education is on the way as a social science, and its candidates will keep on asking for a scholar's degree.

11. Several respondents asked, what do you expect to prove? It should hardly be necessary to say that those responsible for this inquiry set out to discover facts rather than to prove something. Yet a sufficient number of related facts properly interpreted inevitably contain certain implications. Some of the most significant of these implications have been stated in the present chapter. The writers may perhaps now be permitted a few observations of their own growing out of their experiences with this study.

(1) Contrary to positions taken by some respondents, the Ph.D. language question is not settled. It is just opening up. So far the requirement has been largely traditional, based

on the supposed priority of the languages as educational content. But language is losing its element of sacredness as viewed by advanced scholars. It is highly prized as a useful tool where it is needed; the language requirement is resented and evaded when imposed as a matter of form.

(2) The languages as a uniform requirement for the Ph.D. degree should be discontinued. This does not mean that our doctors should know only English. Those who work in fields (and they are many) where languages are a necessary tool should master whatever languages are required, just as they would master any other technical instrument. This would of course do away with formal examinations given by the language departments. It would also ignore the basis of cultural claims of foreign language as related to the Ph.D. degree.

(3) As a corollary of the foregoing, German and French would lose their priority except as determined by service rendered. Every language would stand on the same footing, none would be subsidized by official decree.

(4) Prospective graduate students with science majors should be encouraged while in the senior college or before, to obtain a ready reading knowledge of at least one modern foreign language. This language should be chosen with reference to the proposed line of interest. Instruction in it should cover scientific rather than literary vocabulary and content, with the subtleties of grammar reduced to the functional minimum.

(5) Since for the present at least not all graduate students can be expected to secure the language they require prior to graduate entrance, the graduate school should arrange for classes or tutoring in needed languages, this instruction to be given by persons who are not hampered by the technical linguistic and literary traditions, but are able to teach language as a working tool with the least possible expenditure of time by the learner.

(6) *A suggestion for a further study of the language problem:* Let each separate field appoint a fact-finding commission to discover, (a) the amount of significant material published over a given period in each foreign language; (b) the proportion of this matter which is translated into English within a specified time; (c) the amount and adequacy of the abstracting done; (d) the practicability

of a system of departmental translators; (e) workable plans for making more practical use of foreign language materials in courses, seminars and researches in the graduate school; (f) plans by which earlier language training of serviceable kind may be had by prospective graduate students in fields where this is desirable in view of later language needs; (g) plans by which similar language training may be had by such graduate students as require it after admission to the graduate school.

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